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CO-OPERATION
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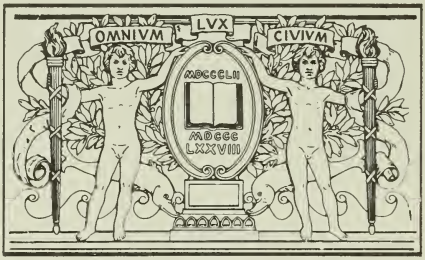

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BOSTON ELEVATED RAILWAY

CO-OPERATION

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January to December, 1930

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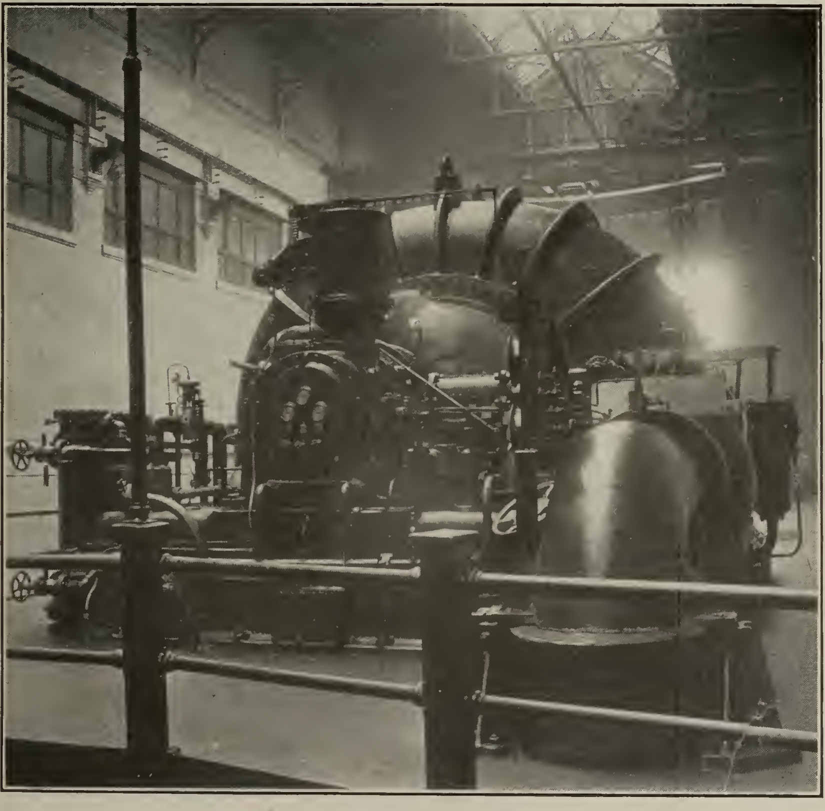
BOSTON ELEVATED RAILWAY
CO-OPERATION

Volume 9 JANUARY, 1930 Number 1

"El" Machines Behind the Scenes



40,000-KILOWATT STEAM TURBINE
This great machine is located in South Boston power plant. In mechanical units its rating is over 53,000 horse power.

To all "EL" EMPLOYEES

AS IS now well known, the Railway has, for the second time, been awarded the Anthony N. Brady memorial gold medal for meritorious achievement in conserving the safety and health of the public and its employees. This medal recognizes our record for 1928; the earlier award was for the record of 1914.

The years intervening between 1914 and 1928 covered the period of enormous automobile development. As of Dec. 31, 1914, there were 1,711,339 passenger cars and motor trucks registered in the United States; in 1928 the number was 24,493,124, an increase of 1333 per cent. In other words the number was multiplied over fourteen times in fourteen years.

Like other urban railways the Boston Elevated had to learn to operate on city streets under radically new conditions. This required time. The award of the Brady medal to the Railway proves that to a highly creditable degree we have learned to operate safely under modern conditions. Fortunately, the 1929 record reinforces the decision of the Board of Award, for that is substantially better than the record for which we received the award.

The winning of the Brady medal was due not to the efforts of any individual or group, but to the entire Railway personnel.

THERE WAS CO-OPERATION ALL ALONG THE LINE

Otherwise the result would have been impossible to achieve. Every one of the thousands who helped to bring about the desired results in accident reduction may well feel a glow of pride as he says to himself or his friends:

"WE won the Brady award for 1928!"

Edward Dana

BOSTON ELEVATED RAILWAY

CO-OPERATION

VOL. 9 JANUARY, 1930 NO. 1

SEVERE TEST FOR TRACK CONSTRUCTION

Water Main Break on Huntington Avenue Caused Washout Under Track—Latter Withstood Extra Load Due to Lifting Heavy Truck From Hole—Track Had Been Built by New Method

DURING the night of Dec. 14, 1929, a 30-inch high-pressure water main burst on Huntington avenue at Wait street. It is located about 9 feet below the surface of the street. Before the water could be turned off, a hole approximately 30 feet long and 25 feet wide at the top, and about 9 feet deep, was formed by the washout.

All of the earth under the in-town track for a distance of about 30 feet was excavated by the water, and the excavation extended across the outbound track as well for about 20 feet.

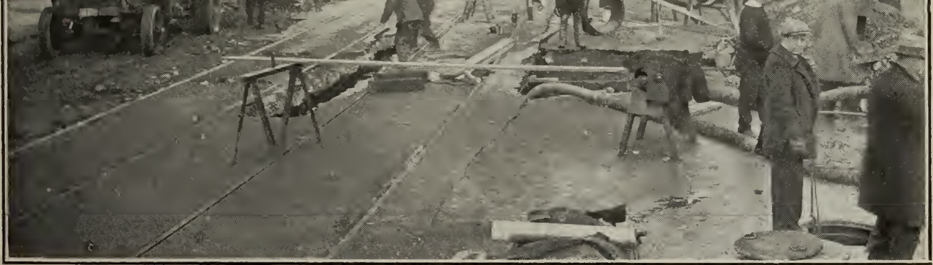
During the excitement, a heavy commercial truck, weighing about 5,000 pounds, passed over the street which was undermined and the truck fell into the excavation head first. The Boston Elevated wrecking truck had to be used to get the other truck out of the hole. The wrecking truck had to stand on the undermined track. As the Boston Elevated wrecking truck weighs about 12,800 pounds and it was estimated to be lifting one-half the weight of the other truck or 2,500 pounds, the total weight on the unsupported track was 15,300 pounds.

The tracks were damaged very little as a result of the water break and the removal of the commercial truck as described above. The in-town track, unsupported for a distance of 30 feet, sagged of its own weight slightly. The out-of-town track, however, remained at proper surface.

The photographs reproduced show conditions as they existed about 18 hours after the discovery of the break.

REPAIRING THE DAMAGE

As the first step in the repairs, the pavement in the space between the two tracks, as well as the broken pavement in the outbound track, were broken through in order to facilitate the placing of shoring to support the tracks and to allow the City departments to make the necessary repairs. If this had not been necessary, the concrete and asphalt pavement would have remained intact for the entire track area, that is the tracks, the dummy and the brows.



SCENE OF THE WATER-MAIN BREAK

When the repairs to the underground structures had been made, car service was resumed on both tracks, these tracks being supported by shoring. Apparently no further repairs to the track will be necessary except to replace the pavement which was broken for the reasons described. The excavation caused by the water had to be filled in, but the shoring supporting the tracks was allowed to remain in place, as the final settlement of the fill will not take place for a considerable period.

Some Track-Structure Details

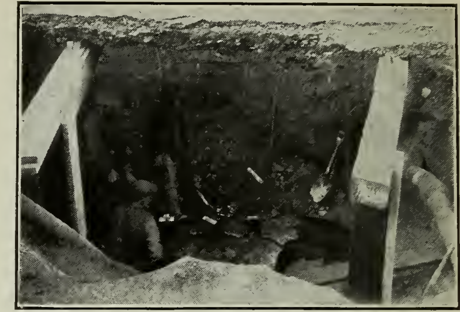
This occurrence demonstrates the solidity of a structure of this sort, as shown by the very minor damage which occurred to the track structure as a result of the water break and other occurrences. The track was part of a section built in September, 1929, by a rather unique method.

The standard-section 7-inch girder rail was used, supported on steel ties spaced 6 feet on centers. Instead of using mixed concrete, as is the usual practice, requiring the track to be supported to line and graded by blocking, bracing, etc., the track was brought to line and graded with dry, broken stone ballast. The voids in this ballast were later filled with cement grout.

Such a method of construction permitted, in this case, the use of the track by cars much earlier than would have been possible had mixed concrete been used. In fact, if necessary, cars could have operated over the track from the time it was brought to line and grade, and while the grout was setting up.

Tests made at the Massachusetts Institute of Technology of the concrete produced by this method showed that it was very strong and of good quality.

Pavement Between Tracks Removed to Permit Repairs to Broken Water Main



Shoring Up the Track

For this job the manufacturer of the steel ties loaned to the Railway, without cost, several special machines which that Company has developed, particularly one for vibrating the concrete while setting. This resulted in a dense, uniform concrete.

GOOD WORK

(Editorial in Boston Post, Jan. 23, 1930.)

Announcing the receipt of the Anthony N. Brady gold medal by the American Museum of Safety, the Boston Elevated prints some figures showing why it was given that testimonial for doing most "to conserve the safety and health of the public and its employees" in 1928. They are eloquent statistics.

The road shows that it had a reduction of 17 per cent in surface accidents in 1928, compared with 1927, and a reduction of 35 per cent in 1928 compared to 1926. The system is thus constantly making a better showing. That is attested by the fact that there was a still further reduction of 12 per cent in accidents on the surface in 1929 in comparison with those of 1928, the year for which the Brady medal was awarded. In 1929, moreover, not one of the 354,000,000 revenue passengers riding in "L" cars, trains or busses actually met death from accident.

The officials of the road well say that "the people of Greater Boston have reason to be proud of this record." Not only have they reason to be, but they are. In spite of the inevitable growls that are heard now and then about the service, the trustees and the operating authorities of the system may rest assured of that.

RAILWAY AWARDED BRADY MEDAL

For Second Time This Trophy of Achievement in Accident Reduction Has Been Won by the "El"—Event Recognized as Honor to Communities Served as Well as to Recipient

THE Boston Elevated Railway has been awarded the Anthony N. Brady gold memorial medal as the railway in the United States which in 1928 did more than any other railway "to conserve the safety and health of the public and the employees." The award was made under the joint auspices of the American Museum of Safety and the American Electric Railway Association. Annual award of the safety medal was authorized in 1914 by the family as a memorial to the late Anthony N. Brady. The first award was made to the Boston Elevated.

Some of the facts considered by the committee on award were: The Elevated showed a reduction of 17 per cent in surface accidents in 1928 compared with 1927, and 35 per cent compared with 1926. Accidents to employees were lower by 20 per cent in 1928 than in 1927. (Since the award was made there has been still further reduction. Accidents on the surface in 1929 were 12 per cent fewer than in 1928. In 1929 not one of the 354,000,000 revenue passengers actually riding in the "El" cars, trains and buses met death from accident.)

From 1927 on, 823,000,000 passengers were carried on the surface and 122,000,000 miles operated without a single death from accident to passengers in a car or bus.

The Brady medal is awarded upon the following railway activities:

Success in gaining good will as indicated by the initiative, skill and enterprise manifested in improved safety conditions.

The improved safety conditions which have resulted from original ideas as well as the extent to which the railway has taken advantage of new developments of safety in operating and maintenance practice and equipment originating with others.

Improvements in safety practices which have resulted in reduced maintenance or greater reliability of service.

Particular success in conducting a safety program and actually reducing the number, seriousness and cost of accidents.

Outstanding accomplishments in the development of co-operation between management and employees in safety promotion.

Outstanding accomplishment in measures to promote safety, sanitation and health of employees.

The Elevated presentation for the award comprised 150 typewritten pages and numerous exhibits. It was an exhaustive study of the equipment, engineering practices, methods involving the study of the individual car operators to determine and correct causes of accidents, measures to promote the safety and health of employees, and measures to develop co-operation between management and employees and good will between the public and the Railway now in effect on the Elevated. The presentation was prepared by a representative committee appointed by the general manager.

Formal presentation of the gold medal is scheduled for Feb. 7, at a meeting of the Metropolitan Section of the American Electric Railway Association in the Engineering Societies' Building, New York. Lewis Gawtry, chairman of the jury of award for the Brady medal, will present the medal, and Mr. Dana will accept it for the Elevated. In addition

ANTHONY·NICHOLAS·BRADY·MEMORIAL·MEDAL
AMERICAN·MUSEUM OF SAFETY 1928
AWARDED TO THE BOSTON ELEVATED RAILWAY COMPANY FOR ACHIEVEMENT IN SAFETY AND SANITATION ON ELECTRIC STREET RAILWAYS OF THE UNITED STATES 1928

FACE AND BACK OF OUR GOLD MEDAL

For the Conservation of Human Life and Health

The

American Museum of Safety

has awarded the

Anthony N. Brady Gold Memorial Medal

to the

Boston Elevated Railway

THE Anthony N. Brady Gold Memorial Medal was awarded by the American Museum of Safety to the Boston Elevated Railway as the railway in the United States which did most "to conserve the safety and health of the public and its employees" in 1928.

The Boston Elevated Railway showed a reduction of 17 per cent in surface accidents in 1928 compared to 1927, and a reduction of 35 per cent in 1928 compared to 1926.

Accidents to employees on the Boston Elevated Railway were reduced by 20 per cent in 1928 compared to 1927

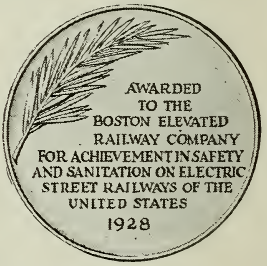
This is a remarkable record of achievement. The Boston Elevated Railway, however, does not rest upon these laurels There was a still further reduction of 12 per cent in accidents on the surface last year (1929) compared to 1928, the year for which the Boston Elevated Railway was awarded the Brady Memorial Medal in recognition of the most conspicuous work in the reduction and prevention of accidents.

You are safe in one of the cars, trains or busses of the Boston Elevated Railway.

In 1929, not one of the 354,000,000 revenue passengers actually riding in the "El" cars, trains or busses met death from accident. In the last three years, from 1927 on, 823,000,000 passengers were carried on the surface and 122,000,000 miles operated without a single death from accident to passengers in a surface car or bus.

The people of Greater Boston have reason to be proud of this record which was achieved only because of the modern and safe equipment of the Boston Elevated Railway — and through intensive and intelligent effort on the part of men and management.

ANTHONY·NICHOLAS·BRADY·MEMORIAL·MEDAL
AMERICAN·MUSEUM OF SAFETY
1928



Riding on the Boston Elevated Railway system is safer than any other mode of transportation,— safer even than walking

Boston Elevated Railway

PARK YOUR TRAFFIC WORRIES—USE THE "EL" SYSTEM

ADVERTISEMENT IN BOSTON NEWSPAPERS OF JANUARY 20.
ACTUAL SIZE 12½ by 8 INCHES

to Mr. Gawtry, the members of the jury of award were: Col. A. B. Barber, manager transportation and communication department, United States Chamber of Commerce; James H. McGraw, chairman of the board, McGraw-Hill Publishing Company, and Lucius S. Storrs, executive chairman, board of directors, United Railways & Electric Company of Baltimore, Md.

Anthony N. Brady, in whose memory the medals are awarded, was a prominent figure in electric railway executive circles until his death on July 23, 1913. He was born in France in 1843, but was brought to this country when he was young. He early showed marked capacity for business and his ventures led him in due course to the public utility field. He was an organizer of the Metropolitan Street Railway in New York (now absorbed into the New York Railways). He was heavily interested in the Brooklyn Rapid Transit Company (now part of the Brooklyn Municipal Transit Corporation), the New York Edison Company, and many others. His son, Nicholas F. Brady, president of the New York Edison Company, has continued and expanded his father's financial interests.

◆

"EL" RADIO TALKS

THE Railway is broadcasting over WEEI this season, on Tuesdays at 8 p.m. In the last issue of "Co-operation" were two of the radio addresses. In this issue three more are given. The series will comprise twelve addresses, the text of all of which will be printed in "Co-operation." This month the talks by Mr. Barnum, Mr. Steward and Mr. Sears are given.

Speed, Comfort and Convenience on the Rapid-Transit Lines

(Mr. Barnum's radio talk of Dec. 24)

Some of you may have noticed the claim advanced during the past week that the "El Service Hour" is put on as propaganda upon the question as to the future form of management of this Railway.

Nothing is further from the fact. As explained at the outset by Mr. Dana, general manager, the "El Service Hour" is for the purpose of attracting more riders to the Elevated by showing the present extent, character, and advantages of the service, and ways in which persons may make greater use of that serivce to their own advantage.

Another object is to give you a better understanding of the difficulties of operation, due in large part to the congestion arising from the enormous increase in automobiles and to solicit your co-operation both as car riders and as automobile drivers in meeting those difficulties.

The subject of my radio talk is the existing rapid-transit service.

First as to speed, may I point out the short time in which you can travel from the suburbs to the heart of Boston.

The running time from Harvard square to Park street is only 8 minutes; from Peabody square, Ashmont station, to the corner of Winter and Washington streets, 16 minutes. You can go from Everett station to Winter street in 14 minutes and from Sullivan square in 10½ minutes. It takes only 16 minutes from Forest Hills to Summer street.

These running times are well maintained, especially on the Cambridge-Dorchester route and in the East Boston tunnel. Delays on the Everett-Forest Hills route due to openings of the Charlestown drawbridge are beyond the control of the managment, since these openings are regulated by the federal government.

On the rapid-transit lines, not only are the trains speedy, but the time between trains is exceedingly short. During rush hours trains are operated at intervals of 2 minutes in the Cambridge-Dorchester tunnel, and 2½ minutes on the other routes. During the normal hours of the day, trains operate every 2½ to 3 minutes from Harvard square to Ashmont; every 4 minutes through the East Boston tunnel and over the main-line elevated.

There is no medium which affords the same assurance of rapid transportation to and through the center of the city as do these three main rapid-transit lines.

Operation over the surface is subject to delays over which we have little and in some cases no control. If a truck or automobile breaks down on our tracks or if a fire hose is laid across the tracks, or if a water main blows up, or if automobiles crowd our right of way or cause long waits at busy intersections, it is impossible to maintain operating schedules. We bespeak your interest as car riders in removing such causes of delay as are avoidable.

We request you as automobile drivers to consider that in speeding to cut off a street car and in cutting in ahead of one you are delaying fifty to one hundred passengers anxious to reach their destination. Over the rapid-transit lines we can operate the trains with a high degree of regularity. For that reason it may save you time to use these lines although they do not furnish the most direct route. It will pay all regular riders to study and try out routes which take advantage of the rapid-transit lines for a part of their trip.

While speaking of surface operation I wish to refer to the recent extension out Beacon street to Washington square of the two and three-car trains which previously terminated at Governor square. We urge people who are not going beyond Washington square to use this service and not to crowd the Reservoir cars. They discommode themselves, the Reservoir people and leave empty the seats which we have provided for them on these trains.

A word now as to the character of the rapid-transit service. The trains are properly heated and ventilated. During the off-peak hours from 9 a.m. to 4.30 p.m. as well as in the evening and early morning you will usually find a seat, and can read your book or newspaper.

We have been stressing the desirability of motorists parking or garaging their automobiles near stations and using the rapid-transit lines to reach the center of Boston. That idea is continually gaining in popularity. By so doing you are relieved of the risk of accident. You are freed of the perplexity of searching for a place to park your car. In a great many cases you will save considerable time.

Last Saturday the final link in the extension of rapid transit to Dorchester was placed in operation with high-speed trolley cars running on private right-of-way from Ashmont to Mattapan. The running time to Ashmont is 10 minutes and from Mattapan to Washington and Winter streets 26 minutes.

Residents of the cities and towns from Quincy and Milton south to the Cape and Taunton would do well to park their automobiles upon reaching Mattapan or Ashmont, or the intervening stations at Valley road, Central avenue, Milton or Cedar Grove, and use the fast-moving cars and trains to the center of Boston.

At Ashmont there is a parking space directly connected with the station; a large space adjoining the Mattapan station is being prepared.

I live in Canton and personally have found it convenient when going to the North or South Station, the Boston Garden or football games at the Stadium to park at Ashmont and use the rapid transit.

Friends of mine from the Cape have been parking their cars at Forest Hills and taking the elevated in town. For the people north of Boston similar opportunity exists at Everett station a short distance from the Revere Beach Boulevard on Broadway. Many persons are now using garages near Harvard square and Kendall square in Cambridge as well as at other stations on the elevated main line, and at Maverick square in East Boston.

We suggest that you try out this method and experience the relief from driving your auto in the increasing congestion of the city streets.

Rapid-transit lines of the Elevated represent a total investment of $73,000,000, the highest investment per capita for rapid transit of any city in the country. These lines assure you quick, comfortable and economical transportation.

Keeping the Track Safe for the Public

(Mr. Steward's radio talk of Dec. 31)

After a moment's reflection, everyone realizes the utmost importance to the public of keeping railway tracks in safe condition. Even a minor defect may interrupt service or cause accidents.

The intricate business of moving you from place to place involves not only the actual operation of trains and cars but also the work performed behind the scenes, with which the public is not generally familiar.

The tracks, signals and other structures are under inspection 24 hours per day and about 150 men devote their entire time to this important work.

Every night, trained crews of men are busy in the subways, in the tunnels under the harbor, and overhead on the elevated structures, testing and repairing tracks, signals, lights and other apparatus to make certain that your journey will be safe.

On the rapid-transit lines, before the rails wear to the limit fixed by the Railroad Commission, new rails are in position ready to be installed.

It is a rule of the Railway that repairs to the rapid-transit lines must never interfere with the operation of trains. Such work must be completed before the first train in the morning.

The signal and interlocking system is thoroughly modern and up to date, and assures safe and speedy passage for trains. If a train for any reason passes a signal set at danger the brakes will be automatically applied and the train will be stopped.

At junction points, the switches and signals are operated from a tower by a machine that sets the switches for the route desired and at the same time locks up the other switches so that there can be no possibility of another train taking a conflicting route.

On the rapid-transit lines, where full speed cannot be operated, as on sharp curves, the safe speed is plainly indicated by signs, and motormen are carefully instructed and frequently checked.

Since trolley cars are operated on all lines for practically 20 hours per day and on certain lines 24 hours, the rebuilding of surface tracks sometimes interferes with the usual operation of cars. The work is carefully planned so that the interference will be as slight as possible. The public should realize, however, that reconstruction of tracks is for their safety and delays because of single-track operation are only temporary.

Any condition that blocks the streets, such as water breaks, fires, or drawbridges out of order, also interferes with car operation. The "El" renders every assistance in its power in such cases.

During the past 11 years, the Elevated has rebuilt and thoroughly repaired 283 miles of surface track.

The cost of maintaining the forty-nine million dollar investment in structures, tracks, stations and right-of-way amounts to nearly three million dollars per year. Without modern equipment, the cost would be much greater. In 1909, 400 men were needed to build 1800 feet of track on a certain street. Two years ago, this track was rebuilt in about the same length of time with 100 men.

As as example of the unusual tasks which the Boston Elevated is sometimes called upon to perform, may I remind radio listeners of the speed with which the East Boston Tunnel was converted from trolley car to third-rail train operation. The last trolley car passed through the tunnel at 8.30 o'clock on Friday night, April 18, 1924. On the following Monday morning, service was resumed with steel trains. This tremendous task of changing the method of operation was accomplished in 50 hours. Ordinarily this job would have required a week. Over 1500 men were employed, in shifts of about 780.

An indication of progress is shown by the remarkable reduction in split switches and derailments on surface lines since 1920 when there were over 900 annually. The number was reduced to 209 last year. Every derailment is investigated, the cause determined and action taken to prevent a recurrence. In 1923 there were 619 delays of 20 minutes or longer for which the Railway was responsible. There were only 227 last year.

The Railway keeps the tracks clear of snow and ice during the winter. The "El's" investment in snow-fighting equipment is three-quarters of a million dollars and the Railway is prepared to start this organization in action on short notice. The cost of fighting snow varies with the severity of the winter. In 1920, more than $600,000 was spent for this purpose.

The snow is removed not only from the track area but for a distance of at least 10 feet from the outer rail and on certain streets back to the curb.

Wherever possible, we urge automobile drivers to use the area thus cleared for them and keep off the tracks. By so doing, the chance of collisions is reduced and street cars can make faster time.

One of the chief causes of delays during the winter arises from automobiles using the track area or breaking down on the tracks. During snow storms, disabled vehicles have been abandoned on the tracks. You can imagine what effect this has on the schedules. Cars are blocked for a long distance. Passengers are seriously delayed.

Every effort is made by the "El" management and employees to keep the way safe and clear. We have purchased modern equipment and have adopted operating and maintenance practices designed to make your ride on the Boston Elevated safe and as free from delays as possible.

May I extend to you in behalf of the trustees, the management and the employees of the Boston Elevated Railway, our best wishes for a prosperous and happy New Year.

The "El" Is a Safe Road

(Mr. Sears' radio talk of Jan. 7)

Did you ever imagine yourself at the handles controlling the power and brakes of a street car?

In common with the youthful ambition to be a policeman or a fireman, that of being a motorman enters the mind of many boys.

In the leisurely days of years ago, when car tracks ran through communities of rural aspect, the operation of a street railway was much simpler than it is today. Horses drawing carriages, wagons or sleighs, moving at a comfortable pace, shared the streets and highways with the horse-drawn car, and with the electric car from the end of the last

(Please turn to page 14)

REVENUE AND EXPENSES—

1910

	1910	1911	1912	1913
Total Revenue	$15,630,562	$16,404,294	$16,400,085	$17,510,54
Railway Operating Expenses:				
Way and Str'ct'res (Maint.)	1,459,827	1,383,676	1,849,877	1,540,548
Removal of Snow and Ice	113,400	34,340	66,461	9,974
Equipment (Maintenance)	1,063,848	1,044,806	1,306,922	1,184,073
Power (Operating)	1,147,913	1,193,354	1,136,979	1,117,762
Power (Maintenance)	159,592	180,404	180,891	130,619
Transportation (Operating)	4,495,871	4,337,458	5,448,644	4,952,320
Traffic (Operating)	80,238	49,588	22,558	13,301
General and Miscellaneous	1,747,487	1,594,578	1,900,352	1,716,718
Depreciation	....	....	....	....
Total	$10,268,176	$9,818,204	$11,912,684	$10,665,315

	Per cent of revenue	Per cent of revenue	Per cent of revenue	Per cen of reven
General and Miscellaneous	11.18	9.72	11.59	9.80
Operating	36.62	34.02	40.29	34.74
Maintenance	17.17	15.90	20.35	16.31
Depreciation	....	....	....	....
Removal of Snow and Ice	.72	.21	.41	.05
Operating ratio	65.69	59.85	72.64	60.90

1920

	1920	1921	1922	1923
Total Revenue	$34,031,636	$33,277,026	$32,699,176	$34,096,81
Railway Operating Expenses:				
Way and Str'ct'res (Maint.)	2,593,726	2,683,384	2,611,362	2,955,69
Removal of Snow and Ice	615,549	63,460	103,291	312,98
Equipment (Maintenance)	3,011,850	2,741,357	2,551,681	2,665,53
Power (Operating)	3,135,296	2,183,737	2,302,763	2,342,04
Power (Maintenance)	468,696	348,764	357,956	351,88
Transportation (Operating)	11,524,823	10,752,383	10,040,832	10,905,93
Traffic (Operating)	3,358	2,401	3,033	3,36
General and Miscellaneous	2,411,824	2,063,571	2,113,541	2,588,81
Depreciation	2,004,000	2,004,000	2,004,000	2,004,00
Total	$25,769,122	$22,843,057	$22,088,459	$24,130,25

	Per cent of revenue	Per cent of revenue	Per cent of revenue	Per cent of revenue
General and Miscellaneous	7.09	6.20	6.46	7.59
Operating	43.09	38.88	37.76	38.86
Maintenance	17.85	17.35	16.88	17.52
Depreciation	5.89	6.02	6.13	5.88
Removal of Snow and Ice	1.81	.19	.32	.92
Operating ratio	75.73	68.64	67.55	70.77

RS ENDING DECEMBER 31

9

1914	1915	1916	1917	1918	1919
,910,176	$18,171,655	$19,376,357	$19,818,407	$21,062,693	$29,498,583
531,835	1,390,311	1,433,870	1,611,097	2,235,018	3,721,965
94,540	54,153	167,418	87,078	77,914	18,550
225,511	1,105,723	1,292,899	1,489,863	2,077,699	2,585,720
211,790	1,109,113	1,116,077	1,415,782	2,238,737	2,385,597
150,125	105,856	142,685	146,158	305,629	338,582
659,147	5,699,670	6,253,508	6,522,360	7,772,434	10,530,882
8,910	9,921	22,911	6,405	9,167	4,758
,700,976	1,815,990	1,904,754	1,948,381	2,094,829	2,110,285
....	142,990	320,000	320,000	1,184,670	2,004,000
,582,834	$11,433,727	$12,654,122	$13,547,124	$17,996,097	$23,700,339
'er cent revenue	Per cent of revenue	Per cent of revenue	Per cent of revenue	Per cent of revenue	Per cent of revenue
9.50	9.99	9.83	9.83	9.95	7.15
38.41	37.52	38.15	40.09	47.57	43.80
16.22	14.32	14.81	16.38	21.93	22.53
....	.79	1.65	1.61	5.62	6.79
.54	.30	.86	.44	.37	.07
64.67	62.92	65.30	68.35	85.44	80.34

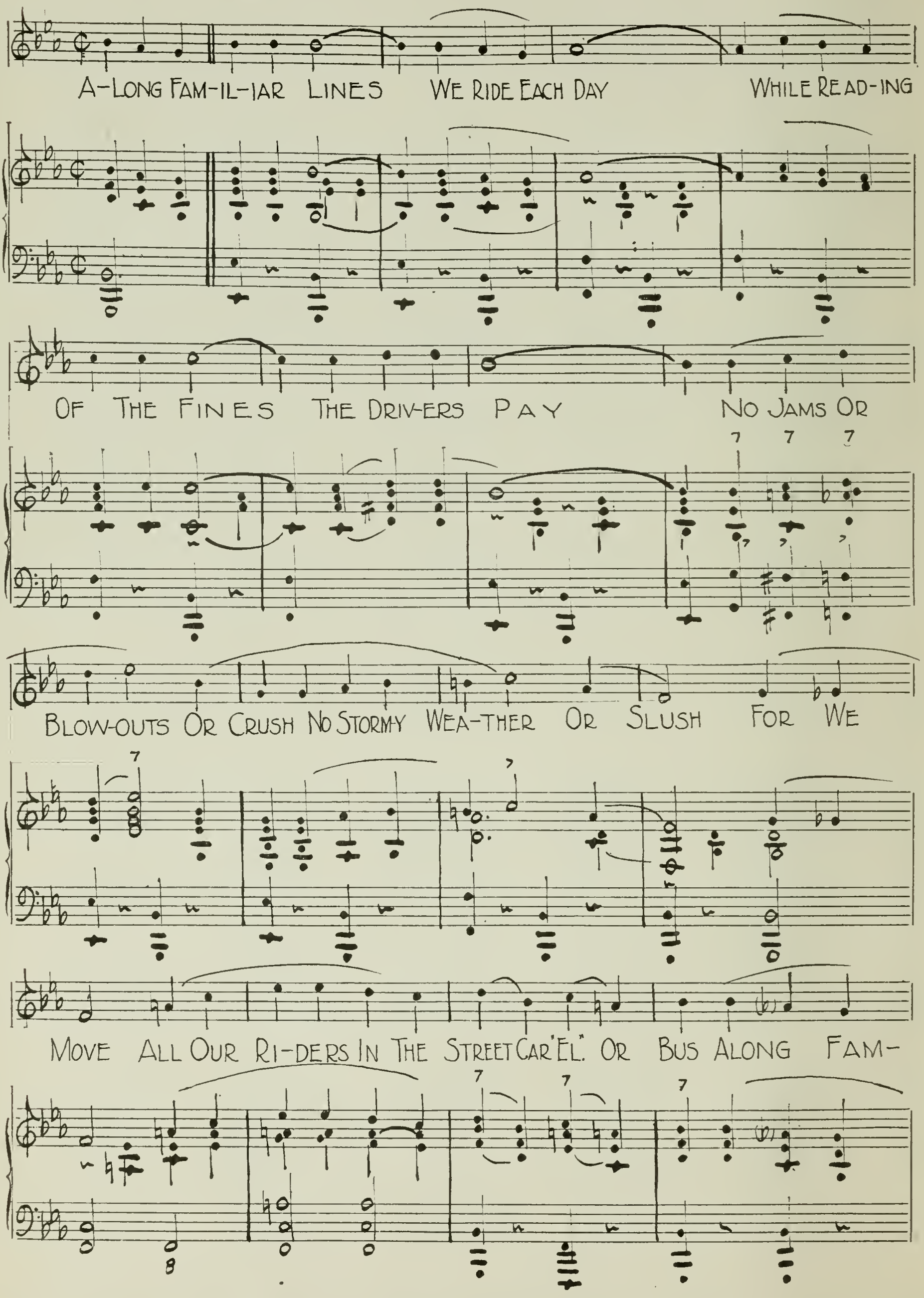
29

1924	1925	1926	1927	1928	1929
4,175,320	$34,547,380	$35,481,313	$35,193,410	$34,843,148	$34,096,623
2,836,772	2,865,886	2,764,921	2,610,830	2,663,665	2,336,088
112,752	102,010	484,165	154,856	57,279	76,930
3,033,022	2,752,796	3,054,504	2,868,226	2,963,457	2,819,257
1,991,328	1,720,239	1,826,409	1,755,115	1,783,480	1,776,760
328,756	266,770	316,166	335,862	297,725	250,694
1,825,235	11,567,233	11,924,518	11,436,060	11,167,506	10,892,280
7,866	3,240	6,139	31,862	33,309	22,253
2,590,403	2,631,562	2,857,724	3,115,301	3,262,626	2,972,430
2,496,000	2,496,000	2,841,722	2,824,220	2,671,142	2,878,055
5,222,134	$24,405,736	$26,076,268	$25,132,332	$24,900,189	24,024,747
r cent revenue	Per cent of revenue	Per cent of revenue	Per cent of revenue	Per cent of revenue	Per cent of revenue
7.58	7.62	8.05	8.85	9.36	8.72
40.45	38.47	38.77	37.57	37.27	37.22
18.13	17.04	17.29	16.52	17.00	15.85
7.31	7.22	8.01	8.03	7.67	8.44
.32	.29	1.37	.44	.16	.23
73.79	70.64	73.49	71.41	71.46	70.46

ALONG FAMILIAR LINES

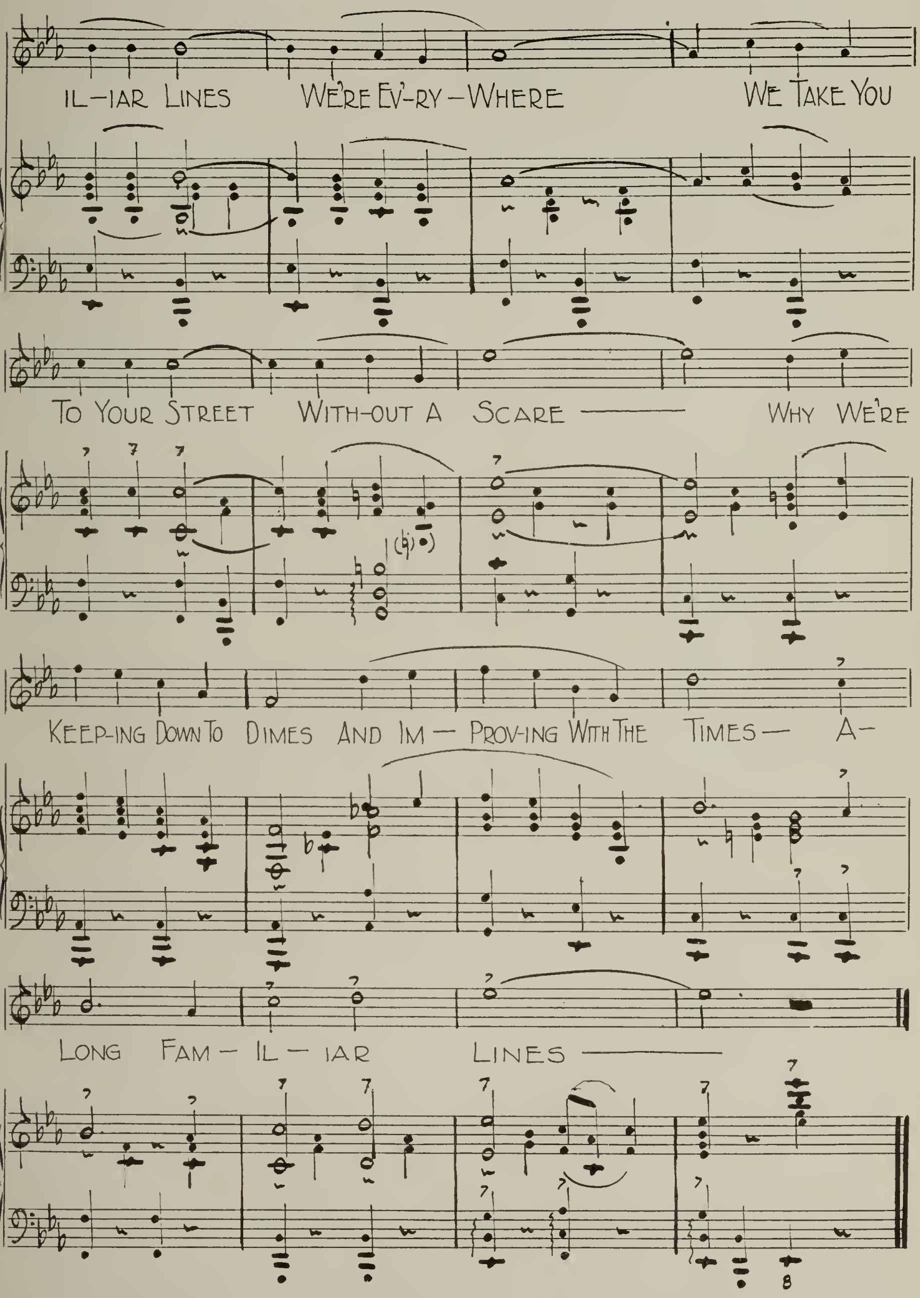
(Copyright, 1929, by Alfred Rooney & Co.)

Theme song for "'El' Service Hour," broadcast Tuesday evenings at 8 o'clock over WEEI.


A-LONG FAM-IL-IAR LINES WE RIDE EACH DAY WHILE READ-ING
OF THE FINES THE DRIV-ERS PAY NO JAMS OR
BLOW-OUTS OR CRUSH NO STORMY WEA-THER OR SLUSH FOR WE
MOVE ALL OUR RI-DERS IN THE STREET CAR "EL" OR BUS ALONG FAM-

ALONG FAMILIAR LINES

(Concluded)


IL-IAR LINES WE'RE EV'-RY-WHERE WE TAKE YOU
TO YOUR STREET WITH-OUT A SCARE —— WHY WE'RE
KEEP-ING DOWN TO DIMES AND IM-PROV-ING WITH THE TIMES — A-
LONG FAM-IL-IAR LINES ——

The "El" Is a Safe Road

(Concluded from page 9)

century. Gradually the scene changed until today fast-moving automobiles, trucks and buses crowd the city streets. Transportation has become an amazingly complex business, giving rise in its various aspects to many new problems.

Picture yourself operating a car along Massachusetts avenue, Huntington avenue, Boylston street, Beacon street, Commonwealth avenue or other important streets. Automobiles use your tracks, attempt to cut sharply in front of you, cross the tracks, and try to get ahead of the door of the car when it is stopping. All these together with careless crossing of the streets by pedestrians, make the work of an operator vastly different than it was in earlier days.

Realizing early the changed conditions of transportation the Elevated management met this new demand upon its operating forces by greater attention to the training of its men and to the safety features of its equipment.

As to equipment. Not a new appliance on the cars or in the shops or power houses is adopted until it has passed rigid examinations as to safety. Safety is the first consideration in every rule of operation. Every day the tracks and signals of the elevated, subway and tunnel lines are inspected throughout.

As to men. Before he is chosen to operate a street car, bus or train, every man must pass a thorough physical examination. Upon reaching the age of 40, every man is examined once a year; and every motorman on rapid-transit lines, once a year regardless of age. The candidate is trained in the operation of his vehicle and its mechanism for six weeks. For an additional period of two months he is placed on probation and is under the close watch of a supervisor. Not only must he attain skill in the operation of his vehicle but he must also become familiar with its parts, know how and why they work as they do, and in an emergency be able to detect and correct minor defects.

Even this training is not all. The Railway does not assume that because a man knows how and does operate his car or bus safely and satisfactorily for a time that he will continue to do so indefinitely. The Railway realizes that a man may fall into incorrect habits of operation and that for a while he may be unable to cope with conditions peculiar to his route. Those men who are involved in a larger number of accidents than the average are studied individually to find out why. Their health, habits of operation and degree of mental alertness are carefully investigated. These men are then re-trained along the lines of their particular needs and readjusted to their work.

In the continuous training of the individual operators to cope with the dangers and complexities of present-day transportation, the "El" is a pioneer. At a time when street accidents have become a public concern and their prevention a subject engaging the attention of authorities everywhere, the Boston Elevated has been able to reduce substantially its collision accidents. During the last three years the number of collision accidents has been reduced about 35 per cent, a truly remarkable record in the face of an alarming increase in accidents generally.

Car riders themselves can help materially in cutting down the number of accidents occurring in boarding and alighting from cars and inside the cars and trains. Getting on and off a car is a simple matter and most people give little attention to it. The chance of accident, however, exists in the simplest operation. In getting on and off a car, take care not to trip or slip. In getting off, watch out for automobiles. While moving in a car to reach your seat or the door, use a strap, stanchion, or "grabhandle" on the back of the seat for support. By observing these simple precautions you may save yourself from a painful fall.

You are safe in one of the cars, trains and buses of the Elevated. In 1929 not one of the 354,000,000 revenue passengers actually riding in the "El" cars, trains or buses met death from accident. In this same year an average of about seven riding passengers per million were injured.

In the three years from 1927 on, 823,000,000 passengers were carried on the surface, and 122,000,000 miles operated without a single death from accident to passengers in a car or bus.

While on the cars of the Railway, the "El" must and does look after your safety. For the dime you pay, you have, in effect, an accident policy practically without limit during your ride. This is good insurance for long or short rides. Riding on the "El" system is safer than any other mode of transportation including walking.

In these days of progress, when nearly every new facility designed for man's use brings in its trail corresponding dangers, may those who use our highways in common follow the age-old advice "Live and Let Live!" which simply means for all to use the highways with due regard to the rights of others—this is the duty of everyone—and you may be assured that the "El" does its part.

"EL" NEWS NOTES

Items of Interest Regarding Recent Incidents With Which All Employees Should Be Familiar

NEW RAMP AT SULLIVAN SQUARE

A ramp and stairway at Sullivan Square, replacing the double-file escalator, was opened to the public on Jan. 11, 1930. It had been constructed since Nov. 12, 1929, at a cost of about $23,000.

The ramp is of steel-frame construction, the floor being of reinforced concrete with a rough surface. It is 8 feet wide. From the lower level a stairway of 15 steps connects directly with the ramp. The total distance from the lower to the upper level, including the ramp and stairway, is 118 feet, the length of the ramp itself being 100 feet. It has a grade of 15 per cent.

The ramp was substituted for the escalators because it will provide a greater degree of safety, economy, capacity and dependability.

VETERAN PENSIONER DIES

HENRY P. WHEELER, appointed a conductor in Div. 1 in 1868, later a receiver at Fields Corner car house, and pensioned May 1, 1903, died on Dec. 27, 1929, a few days short of his 99th birthday. He was considered the oldest man in Quincy, where he lived with a daughter. Mr. Wheeler was active in the Navy during the Civil War, and joined the Railway when about 35 years of age. Besides his railway work, his principal occupation was as a boat captain.

REGARDING THE LAKE STREET-COMMONWEALTH AVENUE SERVICE

IN a letter to the Boston Transcript, dated Dec. 31, 1929, the general manager for the trustees corrected certain erroneous statements and unjustifiable inferences respecting the Lake Street-Commonwealth Avenue service which were contained in a letter appearing in the Transcript on Thursday, Dec. 26. He explained as follows:

The distance over the tracks from Park street to Chestnut Hill avenue, Brighton, is 5.47 miles. Your correspondent claims that it is about 4.5 miles. The actual running time, based on thirteen trips between these points during the rush hours on Friday, Dec. 27, 1929, was 34 minutes. Your correspondent claims that the actual time consumed would be about 50 minutes. The actual running time represents an average speed of 9.6 miles per hour.

At Governor square between 5 and 6 p. m., there were thirteen trips with a total of thirty-three cars operated outbound and transporting 2185 passengers on the Lake street line. In order to provide this service, fifty-eight men and forty-one cars costing $15,000 apiece were in operation on the line during that hour. During the same period, 307 cars entered and left the portal of the subway at Kenmore.

The Boylston street subway was authorized by the Legislature in 1911 at a time when automobile congestion such as exists today was hardly contemplated. The trustee management of today certainly cannot be held responsible for conditions created at such a distant date. They cannot be censured for the increase in automobile traffic at Kenmore and all along the line, over which they have not the slightest control.

Constantly the Trustees have advocated needed relief from the condition at Kenmore on a basis of proper division of cost, and have approved extension of the rapid transit as far as Harvard avenue. An act was passed by the Legislature on July 25, 1928, which authorized the extension of the subway under Governor square and apportioned interest charges partly on the taxpayers and partly on the car riders. It was not accepted by the City of Boston prior to the time limit fixed by the Legislature.

JAMAICA PLAIN SERVICE EXPLAINED

ON behalf of the trustees the general manager, on Dec. 31, 1929, sent the following letter to the Boston Herald:

Two letters appearing in the Herald recently complained of the street car-service to Jamaica Plain via Huntington and South Huntington avenues.

The first letter speaks of over-crowding in outbound cars during rush hours, and also of the service on South Huntington avenue and beyond. The second letter, in support of the first, is general in nature.

The Jamaica Plain-South Huntington avenue service has been the object of careful and frequent inspection during the last five years. With the view of speeding up the service on the line, we have tried express stops to the corner of Massachusetts and Huntington avenues, and to South Huntington avenue, operating an auxiliary line from Massachusetts and Huntington avenues to Arborway. For various reasons, these experiments have not proved satisfactory to the riders. The solution to greatly improved transportation to that section is the extension of rapid transit along Huntington avenue in accordance with one of the routes approved by the Public Trustees.

Recent observations of the Jamaica Plain-South Huntington avenue line show, however, that the number of cars operated and the frequency of service are ample, provided traffic congestion does not interfere, as it invariably does during peak hours of traffic.

A most comprehensive inspection of the entire line during rush hours on Friday, Dec. 20, of this year, at the height of the Christmas business, showed that despite unusually heavy riding on the system, the number of cars provided on the Jamaica Plain-South Huntington avenue line was sufficient.

First, as to the claim of over-crowding. At Copley Square, one of the points of maximum travel, between the hours of 4 p. m. and 6 p. m. there were twenty-two trips with a total of forty-one cars. During this period there were 1663 passengers and 2322 seats provided. In the 15-minute interval from 4 to 4:15 the average number of passengers per car was twenty-seven; from 4:15 to 4:30, twenty-nine; from 4:30 to 4:45, forty-seven; from 4:45 to 5:00, thirty-one; from 5:00 to 5:15, fifty-two; from 5:15 to 5:30, fifty-four; from 5:30 to 5:45, forty-five; from 5:45 to 6:00, forty-five. The seating capacity of the motor cars is fifty-two and of the trailer cars, sixty-two.

Moreover, of these forty-one cars only ten carried more than seating capacity and not one carried more than 50 per cent overload, the accepted standard during rush hours. At the corner of Huntington and South Huntington avenues outbound during the same period, about the same conditions were found except that three cars were overloaded due to traffic which slowed up the movement of the cars and created longer intervals between them.

Second, as to frequency of operation. The cars are started from the Arborway station on a regular frequency which would be sufficient adequately to handle all the passengers on this line, provided the intervals between cars could be maintained to Park street. Our frequent observations disclose that it is almost impossible during the rush hours to maintain the running time of 1 hour and 4 minutes for the round trip. As an example of the effect of interference with traffic upon our schedules, may we point out that on this same day ten of the trips checked showed the following time lost on the round trip: 21½ minutes, 20½, 27, 28½, 24, 26, 33, 27½, 29, 26½.

Third, as to the reasons for these delays. Perhaps the best way to illustrate conditions under which we operate this line during the rush hours is to follow one car and trailer for the entire trip from Arborway and return. For this purpose we will take the car which left Arborway at 4:32 p. m. and which left Park Street at 5:16 p. m., the period of peak travel. This car was 12 minutes late in arriving at Park Street and 28 minutes late on its return to Arborway. Of this delay, 5 minutes and 18 seconds was consumed while the car was standing still at traffic intersections. In large part the balance of the delay is found in slow movement in either direction on account of automobile traffic along Huntington avenue and Boylston street between Dartmouth street and the subway entrance at Arlington street, and from South Huntington avenue to the reservation at Francis street, and on Centre street from the corner of South Huntington avenue through the centre of Jamaica Plain to Curtis Hall.

May we point out as an indication of the heavily travelled section through which this line operates, that at thirteen intersecting points the flow of traffic is so heavy that traffic officers are posted.

It has been necessary, we believe, to go into this matter with considerable detail in order to set forth the difficulties under which this line is operated and to try to clear up in the minds of readers any impression that the Trustees and Management are not aware of the situation along this line. They are attempting by close supervision to overcome these difficulties insofar as possible.

TRANSCRIPT CORRESPONDENT ANSWERED

Typical of the care with which the Trustees explain operating conditions to patrons who criticize the service is a letter from them, signed by the general manager, which was sent to the editor of the Transcript on Jan. 22, 1930. The letter follows:

A correspondent in a letter appearing in the Transcript recently raises a number of questions with respect to the car line operating between Harvard Square and North Cambridge. Several of the criticisms contained in this letter are not in accordance with the facts. Others have brought out the possibility of minor changes to improve conditions. For this reason we are taking the liberty of answering this letter in some detail.

Your correspondent complains of an alleged irregularity in the movement of cars on this line and questions whether this movement could not be made more regular by expressing cars which have a full freight. A recent tabulation showed that eighty-four cars, that is, fifty-five motor cars and twenty-nine trailers, passed over the rails between North Cambridge and Harvard Square inbound between eight and nine o'clock in the morning. Four minutes was the longest interval between cars and that occurred from 8:16 a. m. to 8:20 a. m. Most of the other cars ran at intervals of from ¾ to 1½ minutes.

In view of the large number of cars operating over this line, we consider this to be a high degree of regularity. This regularity was maintained in part by precisely that method which your correspondent claims should be used, namely, the expressing of cars from a certain point when those cars have received a full freight. In this hour, seventeen cars were sent express from various points along the line.

Since the writer apparently lives in the vicinity of Porter Square and could use only the North Cambridge cars outbound, we ascertained the degree of regularity on these North Cambridge cars. We found them running on a headway of practically every three minutes, the longest gap occurring at Harvard Station from 5:06 to 5:13½ p. m., and other intervals of 5 minutes occurring in two or three instances.

We consider this to be a fair degree of regularity. Your correspondent complains about having to wait from 10 to 20 minutes in an effort to board one of the North Cambridge cars. In view of the degree of regularity it would appear that such could not be the case except in rare occurrences. Moreover, our observations show that few passengers were forced to wait for another car. On the night in question there was only one case observed in which passengers were required to wait for the next car, and that was in the case of a single car.

May we point out that this line operates through a heavily populated district. The riding during the rush hours is heavy. In the morning rush hour there were several instances when the cars were filled to capacity, but there was sufficient service to handle all passengers. During the morning rush hour the number of seats furnished was 4614. The number of passengers carried was 6335. From this you will observe that the average for this hour is within the fifty per cent overload for rush hours wihch is the accepted standard.

May we state at this point that efficiency of operation from Harvard Square through Cambridge and Arlington is reduced to a considerable extent by reason of the failure of the authorities in the latter community to grant permission for the location of storage tracks on Massachusetts avenue at some point beyond the North Cambridge carhouse. By operating cars during the rush hours between Harvard Station and the proposed turnout point, service would be furnished where it is most needed and there would be greater regularity of cars and more even distribution of passengers.

Your correspondent states that at Harvard Square cars were stopped before arriving at the berths designated for them and passengers allowed to board before the cars reached their proper berths. Upon observation we found that this may have occurred occasionally in the past while a North Cambridge car was waiting to get to its proper berth which was occupied at the time by another North Cambridge car. This has been corrected by requiring operators to keep doors closed until cars reach their designated berth.

Your correspondent states that the North Cambridge cars are not stopping exactly at the berths designated for them. This was found to be true in some cases due to the Arlington cars overlapping the berths designated for the North Cambridge cars. Changes are now being made in the location of the berth markers so that any chance for this to happen in the future will be eliminated.

Your correspondent raises the question as to the failure on the part of some operators to announce street stops. This matter has been checked up and although it was found that the majority of the men were announcing stops, those who were not were instructed to do so in the future, and they will be followed up to see that they do so.

The writer is apparently under a misapprehension as to the present form of management of the Boston Elevated Railway. He writes to the effect that the interest of the directors may lie primarily in the dividends to the stockholders of the Company. May we point out that the control of the Railway is vested with a board of five public trustees appointed by the Governor and that the directors have no voice in management. May we point out further that, in effect, the Elevated is leased to the Commonwealth and that regardless of the earnings of the Railway, the stockholders get the same dividend rental fixed by law. All economies effected by reason of operating efficiency are entirely for the benefit of the car rider in the form of improved service.

We trust that this letter will clear up any misunderstanding and that it will indicate the intent of men and management to correct causes of just complaint.

AVERAGE REVENUE PASSENGERS PER DAY

The changing characteristics of Boston Elevated Railway traffic are clearly shown in the following tables of average revenue passengers per day. The striking feature is the increase in week-day passengers in certain months of 1929 as compared with the same period in 1917, although other riding all shows decreases.

ENTIRE YEAR
(Ended Dec. 31.)

	1917	1929	Dec. %
Weekday	1,073,943	1,049,304	2.29
Saturday	1,249,588	1,123,058	10.13
Sunday	728,847	518,093	28.92
Holiday	857,902	602,071	29.82
Totals	381,017,338	354,214,990	7.03

No increase during this year.

EIGHT MONTHS
(Omitting June to Sept.)

	1917	1929	Inc.	Dec. %
W'k.	1,088,548	1,099,585	1.01	.—
Sat.	1,269,906	1,203,745	—	5.21
Sun.	705,451	540,885	—	23.33
Hol.	821,181	630,816	—	23.18
	255,786,694	247,890,415	—	3.09

FIVE MONTHS
(Jan., Feb., Mar., Nov., Dec.)

	1917	1929	Inc.	Dec. %
W'k.	1,089,493	1,118,605	2.67	—
Sat.	1,260,031	1,215,968	—	3.49
Sun.	691,914	554,188	—	19.90
Hol.	782,017	627,790	—	19.72
	158,686,215	156,180,136	—	1.579

HONEST ABE

By James Edward Hungerford

He stood for what was right and good,
According to his lights;
The hearts of men he understood,
And gave all men their rights!
He saw the real in ev'ry one—
The sterling and the fine;
Had faith in ev'ry mother's son,
And sympathy divine!

He tried to practice what he preached;
Believed all men born free,
And ev'ry human heart he reached
With love and charity!
He had no patience with pretense,
And hated "bluff" and sham;
He preached the creed of common sense,
And served his Uncle Sam.

He thought this country was a place
Where all should find surcease,
No matter what the shade or race,
And have the gifts of peace!
All mankind had an equal right
To liberty and love!
All were God's children in the sight
Of Him who reigns above!

He drank the dreamer's bitter cup
Of woe upon this earth;
A "man of sorrows," who "looked up,"
And saw his brothers' worth!
He fought for rightness to the end,
Unto his final breath—
And o'er his grave the angels bend—
Who died a martyr's death!

—All rights reserved.—

GENERAL COLE ADDRESSES SUPERVISORS

Before an inspiringly large gathering of members of the Boston Elevated Railway Supervisors' Association on Jan. 22, Gen. Chas. H. Cole, trustee of the Railway, spoke on the subject of "Organization." With many timely and thrilling incidents from his military and political life, he emphasized the elements of success in handling men.

A salient point in the address was the necessity for undivided authority in an organization if results are to be secured. Authority must eventually center in one head. While there are five trustees of the Boston Elevated, their function is to decide policies. The carrying out of these policies is centralized in the manager's office. Some of the most unfortunate experiences in various fields which the speaker cited came about through divided authority. Each man in an organization should take up his problems with his immediate superior, or there can be no discipline.

General Cole pointed out similarities and differences between a military and a non-military organization. In the latter there is more opportunity for consultation, and it is possible for intelligent subordinates to carry out the intent of an order even if the letter may be disobeyed. In other words it might in a peace-time pursuit be possible to change an order in the course of execution in order to secure a desired result.

EDUCATIONAL CALENDAR FOR FEBRUARY

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
						1
2	3 3rd-year foreman conferences Public Speaking	4 Principles of Investment	5 Forum Speaker: F. A. Arnold Nat'l Broadc't'g Co. Transportation Problems (Sect. B.)	6 Selling Car Rides	7 1st-year foreman conferences	8
9	10 4th-year foreman conferences Public Speaking	11 Transportation Problems (Sect. A)	12 Accident Prevention Effective Speech Practical Supervisory Problems	13	14 2nd-year foreman conferences	15
16	17 3rd-year foreman conferences Public Speaking	18 Principles of Investment	19 Supervisors' Asso'n Speaker: John Garvey Dennison Mfg. Co. Transportation Problems (Sect. B.)	20 Selling Car Rides	21 1st-year foreman conferences	22 Washington's Birthday
23	24 4th-year foreman conferences Public Speaking	25 Transportation Problems (Sect. A)	26 Accident Prevention Practical Supervisory Problems	27	28 2nd-year foreman conferences	

In an army this is, of course, out of the question. There it is best to carry out even an imperfect plan than to attempt to improve it during execution.

Gen. Cole congratulated his audience upon the winning by the Railway of the Anthony N. Brady award for sanitation and safety. It was, he said, an achievement of which all might well be proud. It is more than an evidence of good teamwork, it recognizes an accomplishment that will save money for the Railway and thus permit improvement in the service.

The general's address was followed by a humorous motion picture illustrating the tribulations of a couple of salesmen who were trying to dispose of Christmas trees in California. Before the address the Association discussed the nature of entertainment which the members prefer.

DR. McCLINTOCK ON STREET TRAFFIC

Street-traffic problems were discussed by an outstanding expert on this subject at the third meeting of the Boston Elevated Forum on Jan. 8, 1930. This was Dr. Miller McClintock, director of the Albert Russel Erskine Bureau for Traffic Research, Harvard University. In order to render the topic as graphic as possible he pictured, as from an aeroplane, the traffic in the Metropolitan District from hour to hour.

The traffic problem, he said, is the movement of people and goods from point to point as required, and it is disastrous if there is serious interference with this traffic. Streets were not designed for present-day traffic demands, which are increased in part due to automobile popularity and to the prevalent large buildings. Today the streets are overloaded, as is illustrated by the fact that every day 800,000 people enter the central district of Boston. Moreover, supply and demand in street use are not properly balanced.

Relief might come through decrease in demand, but this would not be good business. The supply must be increased. Permanent relief will come through proper city planning, but it is difficult to re-make existing cities. Traffic control, however, while not a solution of the problem does furnish immediate relief. It will greatly reduce the cost of present delays which may run from $30,000,000 to $50,000,000 per year in Boston.

Traffic solution is not a political matter or guesswork, but is one for expert technical guidance. Reasonable rules and regulations must be set up. They must be such as appeal to the people as reasonable. Over-regulation should be avoided. Rules should be capable of adoption as community habits, but in many cases the rules will have to be sold to the community by means of education. This applies to parking, pedestrian traffic at crossings, etc.

Dr. McClintock illustrated his various points with concrete examples. His address led to numerous practical questions which showed close correlation of the thinking of the audience with the speaker's reasoning.

ONCE MORE*

By H. V. Neal, Everett, Mass.

Hurrah, once more the story's told.
The Boston "El" has won the gold!
Its fame through all the land is known,
Its safety record stands alone.

In shop, in office, in pit, on pole,
They all set "Safety" for the goal,
And through the "Hub" from town to town
They safely carry Smith, Jones, Brown.

All boys and girls to school when bound
Can be on time when school bells sound,
And if old age, or tiny tot,
They get good care, they're not forgot.

'Tis "civil service" every day
When strangers do not know their way.
Men ride the "El" to bench or shop,
By night it takes to show or hop.

Along some roads where autos crash
"El" cars are safe for little cash,
Now '29's great work is done.
How many killed? **Three cheers, not one.**
The "El's" great mission to fulfill,
Play safe we must, get there we will.

---

*Written on learning of the award of the Anthony N. Brady medal to the Railway. In 1914, when the Railway was the first to receive this award, Mr. Neal was given the individual employee's medal. Three medals were then awarded, whereas but one goes now to any one company.

TWO BIG EVENTS IN FEBRUARY

FEBRUARY 5

Boston Elevated Forum

EDWARD DANA, *Chairman*

Speaker, FRANK A. ARNOLD, *Director of Promotion, National Broadcasting Company, New York, N. Y.*

FEBRUARY 19

Supervisor's Association

T. F. KIVELL, *Chairman*

Speaker, JOHN GARVEY, *Employment Manager, Dennison Mfg. Co., Framingham, Mass.*

CHANGES IN THE RESERVE FUND

Fiscal Year 1928-29
July 1, 1928, $1,000,000

July	**$331,329.58***	Jan.	**$74,244.54†**
Aug.	**398,356.82***	Feb.	**53,235.38***
Sept.	**204,840.30***	Mar.	**245,409.29†**
Oct.	3,135.31†	Apr.	**140,661.08†**
Nov.	2,583.64†	May	**148,719.82†**
Dec.	225,043.06†	June	**32,187.99***

Profit and loss credit........**$180,153.33**

---

†Excess of revenue over cost of service.

Fiscal Year 1929-30
July 1, 1929, $1,000,000

July	**$285,903.19***
Aug.	**361,650.56***
Sept.	**197,825.11***
Oct.	64,866.77†
Nov.	64,148.53†
Dec.	286,824.84†

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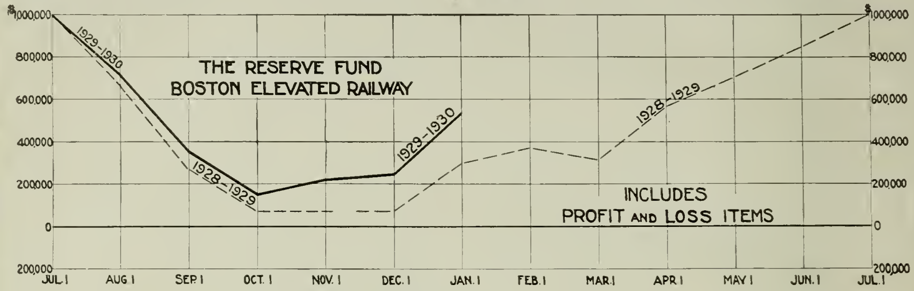
*Excess of cost of service over revenue.



DECEMBER OPERATION

GENERAL FINANCIAL DATA	1929	1928
Revenue exceeded cost of service	$286,824.84	$225,043.06
Operating revenue per car-hour (A.E.R.A. std.)	$6.45	$6.34
Operating revenue per car-mile operated	63.34c	62.63c
Average fare per revenue passenger	9.296c	9.309c
Ratio operating expense to operating revenue	65.39%	66.13%
PASSENGERS CARRIED		
Revenue passengers	32,269,220	32,775,736
Per cent 5c and 6¼c passengers	18.12%	17.81%
Revenue passengers per car-mile operated	6.583	6.509
OPERATING FACTS		
Trips operated	634,615	637,120
Car-miles operated:		
Rapid-transit lines	1,499,238	1,522,295
Surface, two-man	1,172,270	1,514,142
Surface, one-man	1,603,285	1,444,377
Express, newspaper and sprinkler cars	....	37
Motor bus	626,810	554,390
Total miles operated	4,901,603	5,035,241
ACCIDENT DATA		
Accidents per 10,000 car-miles	1.78*	1.75*
Accidents per 10,000 bus-miles	2.30*	2.13*
Revenue passengers carried per accident	19,050	19,450
Average number of witnesses per accident	3.40	2.91
COMPLAINTS AND DEFECTS		
Complaints in regard to car service	70	50
Employees complained of by car riders	87	54
Car defects reported per 10,000 car-miles	3.8	4.1
INFORMATION ABOUT POWER		
D.c. kw.hr. output gross for month	27,027,010	25,461,505
Maximum kw. load	91,560	89,860
Tons of coal consumed for power	23,408	20,228
Lbs. of coal for power per d.c.kw-hr. at cars	1.945	1.784
Operating and maintenance cost of power, including depreciation:		
Per d.c.kw.-hr. for car service	0.843c	0.844c
Per revenue car-mile	4.95c	4.43c
Kw.-hr. per revenue car-mile	5.87	5.25

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*Does not include miscellaneous accidents or derailments.

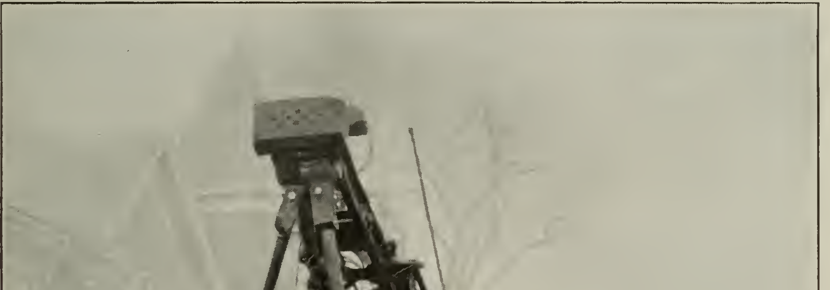
Jan. 23, 1930 EDWARD DANA, *General Manager.*

BOSTON ELEVATED RAILWAY

CO-OPERATION

Volume 9 FEBRUARY, 1930 Number 2

"El" Machines Behind the Scenes



REMOVING OLD TRACK EXPEDITIOUSLY

(For details see page 37)

To All "El" Employees

TWO very interesting incidents have occurred during the past few weeks:

1. The general manager, accompanied by five men from car and bus service, went to New York to receive on behalf of the Boston Elevated Railway the Anthony N. Brady memorial medal for achievement in safety and sanitation.

2. The trustees have issued their annual report, covering the year 1929, in which they state that although there were about 6,000,000 more car-miles of operation in 1929 than in 1922, and although many operating expenses including wages have advanced since then, the operating expenses of the road for 1929 were the lowest since 1922, or $24,024,747.23. The reserve fund, that barometer of operating efficiency, contained a balance of $539,534.91 on Dec. 31, 1929, as against $294,906.75 on Dec. 31, 1928, a gain of $244,1628.16.

◆

Incident No. 1 demonstrates to everybody interested the fact that the Boston Elevated recognized the efforts of the rank and file of the employees in the line of accident reduction. The slogan suggested last month:

***WE* WON THE BRADY AWARD**

was phrased so as to suggest the same idea.

◆

Incident No. 2 is a convincing proof of the existence of the same kind of cooperation that brought about the accident reduction. In spite of a falling-off in gross revenue last year of 1.84 per cent (after allowing for Feb. 29 business) it was possible to reduce expenses by more than that amount. But expenses cannot be reduced indefinitely. If in 1930 we can sell more car rides we shall have more money available for service improvement.

Edward Dana

BOSTON ELEVATED RAILWAY
CO-OPERATION

VOL. 9 FEBRUARY, 1930 NO. 2

RAILWAY FELICITATED ON BRADY AWARD

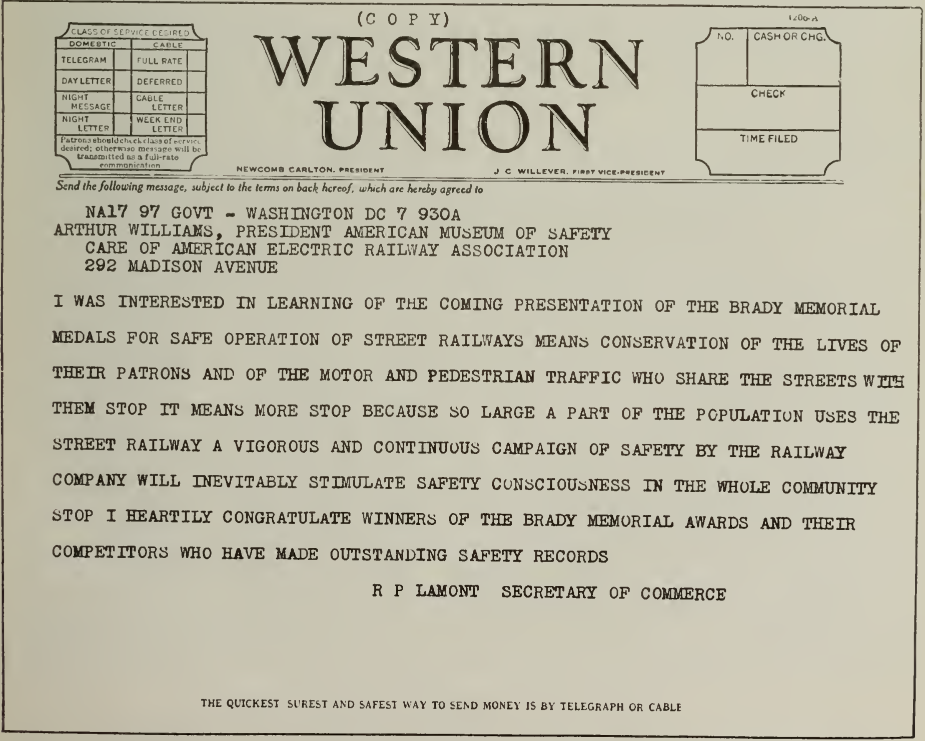
General Manager With Five Car and Bus Men Accept Brady Medal in New York for Railway—Massachusetts Safety Council Joins Chorus of Congratulation

THE presentation of the Anthony N. Brady memorial gold medal, the award of which was recorded in the January issue of "Co-operation," occurred in New York on Feb. 7. The presentation was made at a meeting of the Metropolitan Section of the American Electric Railway Association. The "El" received this medal in recognition of its status as the railway in the United States which did more than any other railway "to conserve the safety and health of the public and the employees.

Mr. Dana went to New York to receive the medal, accompanied by five car and bus men who had had exceptional accident records. (See group picture on page 25.) These five representatives of the Railway were selected for their excellent accident records. Mr. Thomson has been with the Railway for 35 years, Mr. Keegan for 15 years, Mr. Pach for 12 years, Mr. Collins for nearly 27 years, and Mr. Murphy for 25 years.

REMARKS BY MR. DANA

The presentation was made by Lewis Gawtry, chairman the jury of awards, and president of the Bank for Savings in the City of New York. Mr. Dana ac-



(C O P Y)

1206-A

CLASS OF SERVICE DESIRED			
DOMESTIC		CABLE	
TELEGRAM		FULL RATE	
DAY LETTER		DEFERRED	
NIGHT MESSAGE		CABLE LETTER	
NIGHT LETTER		WEEK END LETTER	

Patrons should check class of service desired; otherwise message will be transmitted as a full-rate communication

WESTERN UNION

NEWCOMB CARLTON, PRESIDENT J. C. WILLEVER, FIRST VICE-PRESIDENT

NO.	CASH OR CHG.
CHECK	
TIME FILED	

Send the following message, subject to the terms on back hereof, which are hereby agreed to

NA17 97 GOVT - WASHINGTON DC 7 930A
ARTHUR WILLIAMS, PRESIDENT AMERICAN MUSEUM OF SAFETY
CARE OF AMERICAN ELECTRIC RAILWAY ASSOCIATION
292 MADISON AVENUE

I WAS INTERESTED IN LEARNING OF THE COMING PRESENTATION OF THE BRADY MEMORIAL MEDALS FOR SAFE OPERATION OF STREET RAILWAYS MEANS CONSERVATION OF THE LIVES OF THEIR PATRONS AND OF THE MOTOR AND PEDESTRIAN TRAFFIC WHO SHARE THE STREETS WITH THEM STOP IT MEANS MORE STOP BECAUSE SO LARGE A PART OF THE POPULATION USES THE STREET RAILWAY A VIGOROUS AND CONTINUOUS CAMPAIGN OF SAFETY BY THE RAILWAY COMPANY WILL INEVITABLY STIMULATE SAFETY CONSCIOUSNESS IN THE WHOLE COMMUNITY STOP I HEARTILY CONGRATULATE WINNERS OF THE BRADY MEMORIAL AWARDS AND THEIR COMPETITORS WHO HAVE MADE OUTSTANDING SAFETY RECORDS

R P LAMONT SECRETARY OF COMMERCE

THE QUICKEST SURE AND SAFEST WAY TO SEND MONEY IS BY TELEGRAPH OR CABLE

COMPETITION INTERESTED MEMBER OF PRESIDENT'S CABINET cepted the medal with the following words of appreciation:

"Mr. Gawtry, Mr. Williams,[1] Mr. Gordon,[2] gentlemen of the Meropolitan Section and guests: In one sense I hardly know what to say here as an individual mouthpiece for a group of 8,000 men and women, who have during the last few years, with a determined intent, attempted to operate our railway with an improved record of safety.

"We appreciate, Mr. Gawtry, the honor which you have conferred upon us. I know also that Metropolitan Boston, as a community, appreciates this honor which its railway has had bestowed upon it, because the editorials have indicated that much. But, if I had my way, I would have the 8,000 men over here to listen to the words which Mr. Gordon has spoken and the reference which Mr. Gawtry has made to the men who really accomplished these things. It is a question of team play, of appreciation of what the objective is, and I believe that we have shown that for the year 1928 our men were single-minded. I have brought with me five outstanding men with perfect accident records; one man running rapid transit service since 1901 without an accident against his record, another man who, since motor buses have come in, has operated continuously for seven years, and has had no accident for five years. And the other men are of equal standing.

"I only hope that in their own way they may take back the enthusiasm of this meeting to that group of men on the property.

"I want to pay my respects to the company in which we travel, Tampa, Tide Water and Louisville. We are proud to travel in such company. I ought to make mention of the Personnel Research Federation of New York City, through which

---

[1] Arthur Williams, president American Museum of Safety and vice-president New York Edison Company.

[2] Charles Gordon, managing director American Electric Railway Association.

DELEGATION WHICH RECEIVED MEDAL

Left to right, Edward Dana, general manager; Andrew S. Thomson, R. T. L. motorman; Cornelius Collins, car operator; Frank Q. Murphy, bus operator; Owen Keegan, car operator; Jack Pach, car operator.

we had a survey made and embarked upon waters which had not had the keels of vessels cutting them before. We believe we have struck an avenue of approach to this problem which others may follow and will follow with fruitful results.

"I might say that we have not broken training. Our 1929 record is better than our 1928 record, but I know that we shall have competition in the year 1929 and thereafter.

"I want to thank again the Museum of Safety, the American Electric Railway Association, and the Metropolitan Section for holding this little gathering here, and to repeat how much we appreciate this honor."

ACTION OF M. S. C. DIRECTORS

Mr. Dana later received from the Massachusetts Safety Council the following communication, signed by John H. Sherborne, president:

"At the February meeting of the Directors of the Massachusetts Safety Council, our congratulations were not only extended to you personally, in recognition of the award of the Anthony M. Brady Memorial Medal to the Boston Elevated Railway, but it was voted to give wider publicity to the fact among our members, through the columns of our Bulletin.

"I am enclosing a copy of this Bulletin, with the request that you inform your Board of Trustees of our action. Behind the award of this medal is the more important fact that the Boston Elevated Railway has for several years been seeking to make its own contribution to the important problem of accident reduction in which we are all so deeply concerned. In accomplishing this, it has served the public quite as much as its own employees, a desirable and happy circumstance."

The Bulletin article referred to by Mr. Sherburne was as follows:

"The Boston Elevated Railway, long a valued member of the Massachusetts Safety Council, has won the Anthony M. Brady memorial medal in competition with thirty-five of the largest street-railway systems in the United States, for doing the most "to conserve the safety and health of the public and its employees." The award was made by the American Museum of Safety. It was well deserved. The road has been working consistently to reduce its collisions. They numbered 72,000 in 1927; were reduced to 59,000 in the year following; were 49,000 last year. And the past month has made a new low record for that length of time.

"More than that, the 'El' increased its bus-mileage from six to seven and one-half million miles a year. This required 192 new drivers, only ninety of whom were experienced in operating motor vehicles. It trained the men and increased the mileage without increasing the accidents. Mr. Edward Dana and his associates are entitled to a lot of credit."

The presentation made by the Railway to the Anthony N. Brady memorial medal award committee is being put into type for early distribution to persons interested. The pamphlet will be well illustrated and attractively printed.

"O. M. Static" on the Elevated's Radio Program

In its column "Last Night on the Radio," the *Boston Post*, in the issue for Feb. 26, commented on the series of radio programs which ended the previous evening as follows:

"Edward Dana, general manager of the Boston Elevated, who as we remember began the "L" Service programmes some weeks ago, last night brought them to a close. There wasn't any singing of hosannahs when they came on the air and there wasn't any tragedy in their departure, but they were, while they lasted, infused with many musical virtues and provided talks on each occasion which had the importance of giving the listener the story of the "L" from the inside. Also the whole of the series, instead of breaking off like an experiment that proved itself inadequate, has on the contrary a certain completeness, quite as if the "L" had finished telling its story and was now, for the time being, through. Last night Mr. Dana pleaded for the car riders' co-operation, urging for instance that he have his dime ready, and that he avoid crowding into cars already packed. The series, it seems to us, was entertaining and useful and very intelligently directed and put on."

A Code of Ethics for Foremen

PREPARED BY

The National Association of Foremen

* * *

IN ORDER that modern foremanship may be recognized as a profession, foremen are expected to strive toward the attainment of the following ideals and standards of practice:

1. The foreman should recognize that every man above, beside or below, has an inherent desire to do good work and to be a useful and respected citizen. He should not assume that any man wants to do anything less than his best until he has considered every other possible motive.

2. The foreman should keep an open mind on all subjects, striving to maintain a broad and balanced outlook and being always willing to recognize merit in another's ideas.

3. The foreman should deal fairly with the management, the men and other foremen, assuming responsibility for his own mistakes and refraining from shifting blame to others.

4. The foreman should strive to understand the principles of business which make for success or failure of industry. He should pass at least some of the fundamentals of business principles along to his men, so they can see their own relation to the general scheme.

5. The foreman should keep informed as to the latest developments in equipment and processes. He should recommend or put into effect such methods as will produce improved quality, lower costs of the product and better working conditions.

6. The foreman should regard his profession as a field of social service offering an opportunity to help working people obtain maximum satisfaction from life.

7. The foreman should endeavor to earn, and carefully guard, a reputation for good moral character, good citizenship and common honesty and to support and promote the uplifting influences of the community.

"EL" NEWS NOTES

Items of Interest Regarding Recent Incidents With Which All Employees Should Be Familiar

DORCHESTER BELT LINE REROUTED

REROUTING of the Dorchester belt line, as detailed below, became effective on Feb. 22. The new route runs from Fields Corner along Dorchester avenue to Ashmont, along Talbot avenue to Codman Square, and along Washington, Bowdoin, Hancock, Pleasant and Stoughton streets to Uphams Corner, then to Hancock street and return. The new part of the route consists of Pleasant and Stoughton streets. That part of the previous route from Fields Corner along Dorchester avenue to the corner of Stoughton and Pleasant streets has been discontinued. During normal hours coaches of the new type are used on this line. The change provides increased service in the Meeting House Hill district.

During the morning and afternoon rush hours and during school hours, increased service has also been provided on the Ashmont-Norfolk street bus line.

CAR AND BUS SERVICE CHANGES IN SOMERVILLE, CAMBRIDGE AND MALDEN

THE following changes became operative on Feb. 1:

The car service previously operating between Sullivan Square, Charlestown, and Central Square, Cambridge, is now operated only to Union Square, Somerville, and a new bus line has been established to operate between Union Square and Central Square via Concord avenue, Springfield street and Prospect street.

This is the first step toward the eventual removal of all street cars from Prospect street over which trolley operation has become increasingly difficult on account of rapid increase of congestion. Substitution of the bus will result in quicker service because bus service is more flexible and can move more readily with automobile traffic.

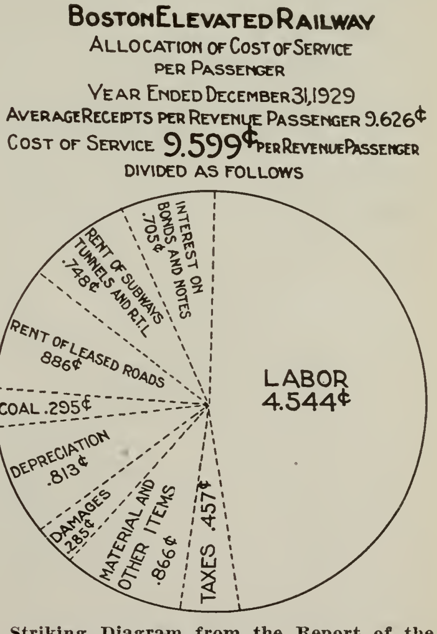
The bus line now operating between Kendall Square and Spring Hill via Hampshire street, Springfield street and Concord avenue has been routed via Hampshire street and Webster avenue. The new route is a more direct and efficient route and will result in an estimated saving to the car riders of from two to three minutes each way.

The other change provides that bus service formerly operating between Malden Square and Broadway North is now operated only between Broadway North and Maplewood Square, connecting with the Lebanon street line at this point. A transfer privilege for local fare passengers to and from the Broadway bus and to and from the Salem street cars is provided at Maplewood Square. The transfer privilege for passengers paying the regular fare was previously in effect at this point.

TRUSTEES' REPORT ISSUED

THE 1929 annual report of the public trustees was filed with the Legislature on Feb. 1 and copies have since been mailed to all employees of the Railway. The report shows that in spite of a decrease of $746,524 in gross revenue and an increase of $261,017 in subway and tunnel rentals, the revenue for the year exceeded the cost of service by $94,072, compared to $40,051 in 1928.

That the road was operated efficiently during 1929 is indicated by the fact that operating expenses for the year were $24,024,747, the lowest since 1922, although 6,000,000 more car-miles were operated in 1929 than in 1922 and many operating expenses including wages had advanced.



A Striking Diagram from the Report of the Trustees

The trustees believe that decrease in riding is largely the result of the inevitable slowing up of service due to congestion on highways particularly at important intersections such as Governor Square, Cottage Farm Bridge, etc. The only solution of the problem is a reasonable extension of rapid transit service and the "training" of the present subway. They state that stimulation of business from new rapid-transit routes is essential if patronage of the road is to be increased.

The trustees state that 20,000 more passengers daily use the Dorchester tunnel in each direction beyond Andrew Square and that a substantial part of these are new riders. About 50,000 passengers daily are using the Dorchester extension in each direction to some point beyond Andrew Square.

The trustees are emphatic in their declaration that the car rider should not pay the entire cost of additional rapid transit extension.

"It is their belief that inasmuch as the construction or extension of rapid-transit service brings benefit to many others besides the car riders, increases property values, and stimulates business prosperity, that some fair portion of the rental cost of the construction for such service should be met otherwise than by collecting it from the pockets of the men and women who pay their fares to ride on the street cars and trains.

"The demand for such service comes not alone from those who will most patronize it. It comes also from property interests and from industry. It is the trustees' conviction that the cost of this service should be fairly apportioned among those who benefit from it. Through operating economies made possible by modern rapid transit the Elevated can meet some proportion of these rental charges without menacing the present basic 10c fare and without inviting a deficit. To undertake to carry the entire load would place upon the backs of men and women car riders a burden which in fairness the trustees feel they should not be asked to bear."

GENERAL ORDER NO. 187

THE following order was issued from the office of the superintendent of transportation on Feb. 10:

To operators, conductors and motormen of surface lines and all others concerned:

Rule No. 17 of the Rules for Conductors, Motormen and Operators is hereby amended by adding paragraph (e), as follows:

(e) Operators, conductors and motormen must pick up and care for newspapers and other litter left in cars or buses and place same in receptacle provided for that purpose.

The throwing of newspapers from trains, cars or buses is forbidden.

TRUCK SHOP BURNS

ON Saint Valentine's Day, Feb. 14, occurred a destructive fire in the Railway's truck shop on Albany street, involving a loss of $50,000 or more. It started in the blacksmith shop and soon the one-story building was a mass of flames. Explosions wrecked the roof. The fire was promptly under control, removing the menace to the other shops on the site and to adjoining residence property. The department of maintenance began a reconstruction program immediately after the fire. This reconstruction work will be described and illustrated in a later issue of "Co-operation."

BOWLING LEAGUE SCORES

BOSTON ELEVATED BOWLING LEAGUE

Standing Feb. 12, 1930

(Two-Thirds Season)

	Won	Lost	Pinfall
Rolling Stock and Shops	57	15	25944
Rapid Transit Lines	48	24	25718
Repairmen	46	26	24597
Division One	44	28	25300
Salem Street	35	37	25088
South Boston Power	31	41	23831
Everett Shop	30	42	24469
Bus Service	29	43	24183
Automotive Equipment	27	45	23797
Supervisors	13	59	23571

High season single, Marshall..............142
High season three-strings, Doherty and Olive 347
High season team single, Salem St........543
High season team three-strings, Salem St.1565

Individual Averages

(Bowlers rolling less than 24 strings omitted—Nearest even numbers)

Wilson 100, Mann 99, McCarthy 99, Ritchie 99, Doherty 98, Marshall 97, Swain 97, Foley 97, Rose 97, Bunney 96, McCrystal 96, Potterton 96, Reardon 95, Small, 95, Murphy 95, Page 95, Smith 95, Tower 94, O'Brien 94, Thomas 93, Fitch 92, Wright 92, Gilbert 92, McLellan 92, Ball, 92, Olive 92, Hasson 91, Benson 90, Carter 90, Nelson 90, Clinton 90, Castagno 90 Moccia 90, A. Reilly 89, Callahan 89, Burgess 89, C. Reilly 89, Kelley 89, Cunally 88, Carney 88, Riley 88, Owens 88, J. O'Keefe. 88, Maw 87, Griffin 87, Cox 86, Missett 86, Jewell 84, Beaudoin 83, E. O'Keefe 83.

W. J. Carney, President; E. A. O'Brien, Secretary; H. C. Olive, Scorer.

"EL" RADIO TALKS

THE Railway is broadcasting over WEEI this season, on Tuesdays at 8 p.m. In previous issues of "Co-operation" appeared five of the radio addresses. In this issue four more are given. The series will comprise twelve addresses, the text of all of which will be printed in "Co-operation." This month the talks by Messrs. Dana, Cole, Johnson and Whiting are given.

"El" Employees and the Public

(Mr. Dana's radio talk of Jan. 14, 1930)

Tonight I shall talk on the Elevated as a human institution.

The Elevated plant, made up of rails, cars, wires, shops, boilers, generators and motors, represents a physical investment of 175 million dollars. Until a robot has been invented for the purpose, this plant could not by any stretch of the imagination render service to a million people a day without human hands and wills to give it life and motion.

Now fancy a line of earnest, eager faces, men and women, stretching in single file over seven miles long and marching up to this big physical plant to take their places and make it their life industry.

There are 8,000 of them. All through the 24 hours they go on and off duty to perform their individual specific tasks in the great machine producing transportation service for you. At no time are they all on duty at the same time. At no time is it possible for them all to be together as one unit or for you to see them all together. Yet they must cooperate so that the machine shall function as a single unit.

They know what public service means. They have pride in their life work and are hurt by unfair criticism, even as you and I. Many of them can look down the years and realize the great improvements which have been developed in your service today as compared with the days when they first entered that service.

When service is translated into terms of the men and the women who produce it, some interesting facts are brought out. More than 800, or over 10 per cent, of the Elevated family have given service for 30 years or longer. A dozen or more have done so for over a half century. Twenty years ago one-half the force changed every year. Today an experienced, permanent force exists. No new men have entered transportation service since March, 1928, nearly two years ago.

I want you to know that I am proud of the Elevated personnel because I know them, I have grown up with them, and appreciate the problems which have been overcome in recent years only through co-operation on their part.

The great aim in modern industry is to secure team-play. Education, training on the job, constant study of the problems of the service, all these interest the employees.

If I should tell you that during the last seven years about 800 of our employees each year have voluntarily registered in educational classes throughout the winter months for the purpose of making better the service you receive, would you feel that an industrial organization had a soul?

The employee's interest in his work is stimulated through a publication called "Co-operation" sent to him every month. This pamphlet, issued under the direction of the general manager, informs the employees as to the financial condition of the Railway and contains instructive articles relating to its various activities. Through this medium the employees are informed as to just what is happening on the system. I think this knowledge reverts to the benefit of the riders. Employees who are aware of the problems of the Railway, and of the means taken to meet these problems, are in a better position to do their part in making the transportation facilities more satisfactory to the users.

At this time I wish to mention the matter of complaints. Contrary to popular misunderstanding, every complaint to the Elevated becomes a matter of record and is investigated. Every month the men against whom several complaints have been made are gathered together and effort is made to have them correct the causes. The number of complaints made against individuals in the service has been reduced by almost one-third in the last ten years.

Complaints that are accurate and caused by poor service are helpful. Do not forget, however, that a complaint hastily made and inaccurately stated

(Please turn to page 32)

MISCELLANEOUS STATISTI

	1929	1928	1927
Bonds Outstanding	$51,674,000.00	$51,674,000.00	$51,674,000.00
Notes Payable	300,000.00	2,050,000.00	2,800,000.00
Total Investment (B. E. Ry.)	113,767,930.76	113,493,847.13	112,907,350.02
Total Assets	122,483,266.10	122,212,369.79	123,022,514.79
Total Investment in Rd. Owned & Leased	175,224,091.62	172,486,669.04	163,901,383.91
Revenue Passengers Carried	354,214,990	362,005,033	366,938,908
Total Passenger Revenue	32,885,587.94	33,616,877.00	34,000,570.95
Gross Income	34,096,623.03	34,843,147.51	35,193,410.03
Total Operating Expenses	24,024,747.23	24,900,188.69	25,132,332.81
Taxes	1,619,962.88	1,721,678.45	1,864,135.90
Rent of Leased Rds. (Incl. Div'd Rental)	3,139,000.80	3,145,726.48	3,152,431.71
Subway, Tunnel and R. T. L. Rents	2,650,371.31	2,389,354.11	2,224,087.95
Interest on Bonds and Notes	2,495,850.19	2,557,565.53	2,524,843.23
Miscellaneous Items	72,617.98	88,583.23	72,762.94
Total Cost of Service	34,002,550.39	34,803,096.49	34,970,594.54
Balance After Cost of Service	94,072.64	40,051.02	222,815.49
Cars and Buses:			
Surface Cars	1,461	1,543	1,572
Rapid Transit Cars	528	528	527
Buses	319	293	241
Total Cars and Buses	2,308	2,364	2,340
Revenue Mileage:			
Surface Cars	32,616,343	34,774,139	36,040,665
Rapid Transit Cars	16,924,006	16,701,106	15,224,531
Buses	7,138,386	5,999,879	5,562,766
Express and Sprinkler Cars	6,250	6,168	6,067
Total Revenue Mileage	56,684,985	57,481,292	56,834,029

Bureau of Audit
January 22, 1930.

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†Deficit.

This table gives a perspective view of the operation of the
other items of interest, an increase of 25 percent in total invest
beginning and end of the period is almost the same. Subway, tu
service was slightly less, although total revenue mileage increas
indicated in the table).

EARS ENDED DECEMBER 31

	1925	1924	1923	1922	1921	1920
.00	$49,819,000.00	$49,819,000.00	$49,221,000.00	$46,921,000.00	$44,965,000.00	$44,965,000.00
.00	2,800.000.00	5,200,000.00	3,934,172.50	1,800,000.00	7,561,617.34	8,127,917.95
68	107,054,798.19	106,121,857.09	103,949,260.86	98,368,027.60	103,092,568.34	103,003,664.26
69	117,534,825.38	118,618,580.66	116,064,181.91	111,021,224.10	116,694,380.91	115,717,026.19
62	156,474,884.41	155,490,852.91	149,001,108.85	143,345,873.68	141,345,133.42	139,156,058.00
01	365,036,286	382,888,848	382,149,697	356,593,942	337,252,080	335,526,561
90	33,790,441.73	33,419,172.22	33,297,951.50	31,834,022.77	32,253,629.59	33,108,946.48
38	34,547,379.61	34,175,319.61	34,096,813.26	32,699,176.37	33,277,025.53	34,031,636.44
11	24,405,735.57	25,222,133.56	24,130,253.41	22,088,458.75	22,843,056.99	25,769,122.11
61	1,652,517.57	1,623,995.65	1,688,139.91	1,587,186.83	1,546,758.15	1,142,987.28
21	3,169,448.86	3,175,566.55	3,185,577.67	3,646,595.75	4,203,061.72	4,102,230.36
93	2,217,470.08	2,125,593.96	2,026,936.52	2,008,414.25	1,963,737.78	1,790,432.30
81	2,540,909.21	2,602,891.00	2,316,026.54	1,891,315.57	1,494,258.43	1,514,963.98
83	59,104.47	61,835.29	70,247.65	65,016.14	54,707.59	59,067.65
50	34,045,185.76	34,812,016.01	33,417,181.70	31,286,987.29	32,105,580.66	34,378,803.68
12†	502,193.85	636,696.40†	679,631.56	1,412,189.08	1,171,444.87	347,167.24†
27	1,649	1,652	1,630	1,575	1,649	2,229
68	468	468	461	421	416	420
30	149	66	31	6	....	....
25	2,266	2,186	2,122	2,002	2,065	2,649
03	38,151,982	40,350,079	39,789,169	37,195,057	35,732,207	36,697,053
78	14,836,656	14,747,699	13,795,114	13,316.094	13,974,490	14,540,474
00	2,472,456	890,901	465,382	63,937	....	....
00	97,032	102,668	106,399	132,652	97,928	122,328
381	55,558,126	56,091,347	54,156,064	50,707,740	49,804,625	51,359,855

Elevated Railway covering a period of ten years. It shows, among
road owned and leased in this period. The gross income at the
d rapid-transit rents increased nearly 40 percent. Total cost of
ercent and although there were substantial wage increases (not

(Continued from page 29)

may do great harm to some individual. It is only fair, too, that written complaints should be signed with the full name and address of the complainant. Anonymous complaints give rise to the thought that the writer might have some personal feeling against the employee in question, or that there is some doubt of the fairness of the complaint. A *bona fide* complaint certainly merits a *bona fide* signature.

Co-operation of men and management has brought about economies in operation which have been of direct benefit to the car riders. Increases in wages, established chiefly through arbitration, have been absorbed in large part through the efforts of men and management to bring about savings and a higher degree of operating efficiency. A few figures will suffice to bring out this point. Despite an approximate increase of $12,000 a week on the payroll and an increase of eight dollars per week per individual compared to ten years ago, the total number of employees today is about 1800 less than it was in 1919, and the public has been given the benefit of approximately 100,000 miles of additional service a week.

This has been brought about only through mutual understanding of the problems involved. Co-operation on the part of the men and alertness on the part of the management has put into effect greater operating efficiency.

The men of whom I have been talking are not super-men. They have the faults and virtues common to other large groups of men. They are, however, well trained in the requirements of their work and are well informed as to the Railway's operating problems. I believe that they are interested in the service, that they recognize their responsibility to the public, and try to discharge it in a courteous and satisfactory manner.

Selling Car Rides

(General Cole's radio talk of Jan. 21, 1930)

Transportation is the foundation upon which civilization has been built. History tells us that countries with the best systems of transportation became the greatest nations of their time. Similarly mass transportation is the foundation upon which modern cities are built. Without it no city could long survive. The better the transportation system the greater the growth of the city.

There is a mistaken idea in the minds of many that prosperity for the "El" redounds only to the benefit of the stockholders of the Company. As a matter of fact, the "El" is leased to the State and, no matter whether the Railway makes one dollar or ten million dollars, the stockholders get the same dividend rental. Any surplus the "El" may make goes entirely to the benefit of the car-rider in the form of improved service or lower carfare. The more car rides we can sell the better service we can give.

The "El" is selling transportation in the form of service. It takes you from any section of greater Boston to any other section, and charges you only one fare. No other city in the country has such a comprehensive free transfer system. You can live in Arlington and work in Mattapan or East Boston and *vice versa.* Under such a system, any section can remain, if it chooses, wholly residential and keep factories from encroaching on it.

To do this work the "El" employs eight thousand people, who operate a system which cost one hundred and seventy-five million dollars. Your interest in this system is in its adequacy, speed, safety and convenience. After supplying these facilities the "El" must try to have you use them to the maximum.

We want and we need more car riders. In the past few years new bus lines have been established and rapid-transit lines have been extended. Today the Railway is operating one hundred thousand more miles every week than ten years ago. These improvements demonstrate that the "El" is reaching out for new business and giving better service for the car rider at the same time. It is our constant aim to maintain existing service at a high standard and to supply additional service to meet changing conditions where such service will bear the additional cost.

Greater use of the "El" will save you time and money. For instance, if you have been driving to down-town Boston by automobile, you will save time by parking at the nearest rapid-transit terminal and continuing your journey on the "El," both during business and theatre hours. Also, to get about in town it is cheaper and quicker for you to use a rapid-transit line than any other means of transportation. Women shoppers will find it comfortable and convenient to use the "El" in the off peak hours from 9:30 until 4:00 o'oclock when they will usually find seats. On Sundays and holidays you will find it more comfortable to go to the parks and from one outlying section to another by the "El" instead of trying to use congested roads and parking spaces.

But above all we want your good will,

a friendly and understanding spirit, a feeling on your part that you have at hand a medium to get you safely and quickly from one place to another in the greater city. For, after all, the "El" is your system. We are always trying to translate the revenue received into terms of maximum mileage, and speedy and safe transportation.

The most important factor, however, in building good will is the service rendered by the men and women of the Railway who come in contact with the public. Every other department of this Company may function one hundred per cent and yet if those who are in contact with the public fail in their responsibilities, we cannot gain the public's good will. Upon these employees who deal personally with the public depends in large measure the extent to which the "El" is praised or censured.

I believe they are a courteous and obliging body as a whole. One million passengers ride every day on the "El." Many of them are visitors and strangers to the city. The "El" employees are constantly called upon to furnish information as to the location of buildings, streets, sections of the city and how to get there. It is part of their work to announce street stops and transfer points. For the comfort of passengers, they must properly arrange seats and regulate ventilation and heat. Frequently they are called upon to give personal aid to children and to blind or infirm passengers. Above all operators must exercise the greatest care to prevent accidents to their passengers. Safety in operation is a vital necessity to good will. As an evidence of the immense amount of thought and work put into this question, the "El" was recently awarded the Brady Medal as the Railway in the United States doing the most to conserve the safety and health of the public and the employees in the year 1928.

The "El" operated fifty-seven million miles last year and carried three hundred and fifty million passengers, yet we had only one complaint against employees for every three hundred and forty-four thousand passengers carried. This, I consider an excellent record.

We frankly say to you we are conducting these radio talks in order to sell car rides, so that we may improve your service. We are taking you into our confidence to convice you of our sincerity of purpose. We want you to know that the transportation problem is a large and a complicated one. We want your help in our endeavor to give you the best transportation we can, and you can help us by using the Elevated service.

Keeping the "El" Cars, Trains and Buses Safe and Reliable

(Mr. Ernest A. Johnson's radio talk of Jan. 28, 1930)

Previous talks have given you a view of part of the important work which goes on off-stage in order to make possible that part of the "El" service in which you are chiefly interested, namely, carrying you from one place to another.

Tonight I shall tell you briefly how the "El" cars and buses are kept safe and reliable.

A large part of the total investment of the "El" is represented by the cars, trains and buses. This equipment is valued at twenty-nine and one-half millions of dollars. There is an additional investment of ten and one-half millions of dollars in shops, carhouses and garages.

More than sixteen hundred employees, divided into forty-six crafts or classes, work in the various shops and carhouses so that the "El" vehicles will be in proper condition.

Trains, cars and buses are inspected on systematic schedules. Some parts are inspected daily. Others once or twice a week. Cars and buses are thoroughly overhauled on a definite schedule with the idea of preventing interruptions to service.

I should like at this point to mention the Everett shops which are models of their kind. These shops were built under trustee management for the repair and painting of car and bus bodies. They are equipped with the most modern machinery and tools. Last year nearly nine hundred passenger cars and buses were thoroughly overhauled and painted.

Car defects may result in delays to service. During the last ten years, defects in cars and trains have been reduced forty-one per cent on the rapid transit lines and fifty-nine per cent on the surface lines.

This noteworthy reduction means better service for the car riders. And that is what interests both you and me.

As a health precaution, all cars and buses are swept and dusted daily and a strong disinfectant is used. The paint on the inside of the cars and buses is washed at regular intervals and the outside is washed frequently, depending upon weather conditions.

Most of you are aware of the developments which have taken place during the last thirty-five years in the equipment used to transport you. Many of you can recall the old-time horse car seating twenty-six passengers. These cars cost about twelve hundred dollars complete.

More recently came the box car and its offspring, the articulated car, made up of two box cars joined to a vestibule. As recently as 1918, about forty per cent of the service was rendered by the box and articulated cars. Today these have disappeared from the streets and have been replaced by a modern car seating from forty-eight to sixty-two passengers. The latest of these in use on the Elevated cost about twelve thousand dollars, about ten times as much as the old horse car.

The development of rapid-transit facilities and the co-ordination of bus with surface and rapid transit lines have been outstanding accomplishments in Boston. At present about forty-two per cent of the total revenue mileage of the Elevated is furnished by the rapid-transit and bus lines. The Cambridge subway cars, representing the most advanced type of carrier, cost twenty-five thousand dollars each. The main line "El" cars cost twenty thousand dollars, and the modern type of bus about eleven thousand dollars.

The Elevated leads the industry in modernization of equipment. In the last eleven years, the trustees have spent more than twenty millions of dollars for new cars, trains and motor buses. No other railway in the country has such a record. Since 1918, the Elevated has bought an average of about one hundred and ten new cars a year. This means that we have been renewing the car equipment at the rate of five per cent each year. The industry as a whole is renewing car equipment at about one-third that rate.

Over the year, the Elevated has contributed materially to the advance in transportation methods. The first rapid-transit car to be built without open end platforms was designed here. In Boston also was developed the first car door operated by power and controlled from the end of the car. The large Cambridge subway trains, designed especially for operation in Boston, were an important forward step inaugurated here. All these improvements, later adopted in other cities, have marked the Boston Elevated as a pioneer and have made for the greater safety, comfort and convenience of car riders everywhere.

The inventive genius of men in the employ of the Elevated has furnished the solution to many engineering problems. A large number of patents on important inventions have been granted to "El" employees. I cite these simply to point out that the Elevated is not content to wait for improvements from the outside, but that through its own men finds the solution to most of its engineering difficulties.

Last year the Elevated spent nearly $4,500,000 on the upkeep of its cars and buses. We want the people of Boston to know that every precaution is taken that the "El" vehicles in which they ride shall be safe and dependable in order that their trip shall be as free as is humanly possible from delays due to causes within our control.

One of the first requisites in selling transportation is a safe and dependable vehicle. I can assure you that in this respect the Boston Elevated is among the leaders of all the railways in the country. The "El" is worthy of being considered first when you want to go anywhere in Metropolitan Boston.

Why You Ride on the "El"

(Mr. Whiting's radio talk of Feb. 4, 1930)

Good evening, all. I shall not interrupt this excellent musical program long. It seems too bad to interrupt it at all. I have been sitting here, listening to the orchestra, and when the announcer gave me the signal that it was about time for me to take my turn up here at the microphone my first thought was to sing something.

Years ago I sang once before a group of people, being suddenly called upon to take someone's place, and I chose a simple song which I thought would move my hearers, and maybe please them. It was "My Old Kentucky Home." I put all I had into it. I sang it with emotion. I pictured to myself the pleasant scenes of the sunny South, and I tried to sing as if I had been brought up in Kentucky.

The song seemed to go rather well. I noticed particularly one old gentleman, with flowing white hair, sitting in the front row. As I hit the first note he looked startled. Then he leaned forward, his mouth half open, his eyes glued on mine. He seemed to be in a sort of trance, or daze. Before I was half through he had his handkerchief out, mopping his forhead, and dabbing at his eyes. By the end of the song the tears were trickling down his cheeks and he was groaning softly. I could hardly finish.

After it was all over I met this fine old gentleman and shook hands with him. "Sir," I said, "I noticed that as I sang 'My Old Kentucky Home' you wept and groaned with emotion. Are you a Kentuckian?"

"No," he said, "I am a musician."

And that's why I don't sing now.

The topic of my little talk tonight is—"Why you ride on the Elevated."

Well, perhaps you don't. More likely you do. And this is why: Because you find on the Elevated these five distinct advantages over any other means of local transportation: Greater convenience, economy, speed, ease and safety.

Convenience: The Elevated is there when and where you want it. You can rely on it in any weather. You don't have to back it out of a garage. You don't find it frozen up when you are in a hurry to get to town in the morning. You don't have a flat tire half way to town. You don't find a tag on it when you start home. You start from one point and you go to another, and the Elevated takes you there.

If you own an automobile use it, but use it sensibly. Park your car at one of the parking places near the rapid-transit lines, and take the Elevated train the rest of the way in town. By doing this, you have the pleasure of the motor ride through the roads where the traffic is not congested, and then when you come to the part of the trip where motoring is a torture instead of a pleasure, you get aboard an Elevated rapid-transit train and you are carried swiftly through the crowded city to the point you want to reach, without worry on your part—and when you get there you don't have to hunt up a place to park your car.

The Elevated serves your convenience. That's part of our job.

Economy: The Elevated provides the cars, you get the ride. You don't have to invest from five hundred dollars to five thousand dollars before you start riding. The man with a dime is just as rich on the Elevated as the man with a million. When you pay your dime you are for the time being part owner of one hundred and seventy-five million dollars worth of property, which is operated and maintained to give you a safe, comfortable and quick trip between your home and your work. The Elevated is everyone's motor car.

You can go to town in the morning and to your home at night, six days each week, for one dollar and twenty cents per week. Reckon up how much it would cost you to do this with your own automobile, find the answer, and put the difference in the bank.

Speed: You can travel by rapid transit from Harvard Square, Cambridge, to Park street, Boston, in eight minutes. How long does it take you to drive the same trip in your car? The running time by Elevated from the Everett station to Winter street is 14 minutes. Try that trip in your car, and compare the time. Maybe you live out at Mattapan. If you have not tried the new rapid-transit service out there, do it, and note that it will take you 26 minutes to go from Mattapan to the Washington street station on the Elevated. From Forest Hills to Summer street the running time is 16 minutes, and from Dudley street to Summer street it is only eight minutes. That's speed. It's yours. These running times are well maintained except for the inevitable slight slowing up process during the extreme peak of rush hour travel, and except for delays on the Everett-Forest Hills route due to opening of drawbridges over which the "El" has no control. Drive your car part way to town, then use the "El" system.

Surface lines cannot make as good speed as the rapid-transit lines. But exactly the same delays that hold up surface car speed also hold up motor car traffic. We of the Elevated want to see speed bettered on some surface lines, such as the Jamaica Plain cars on Huntington and South Huntington avenues. We want to see service speeded up on the line between Dudley street and Harvard square. These are important lines. The service on them does not satisfy the Elevated management. Street congestion ties those lines up, holds them back, makes the passengers late to work in the morning, and late to dinner at night. We are trying to improve those lines, and it is a problem which involves not alone the Elevated but all street traffic. With the co-operation of the city authorities we are going to solve it.

Ease: What is an hour a day worth to you in the way of reading? The Elevated gives you that hour. Did you ever try reading the paper while you drive your automobile? Tomorrow morning, if you have been in the habit of driving your car in town every morning, try this experiment: Take the Elevated. Read your morning paper. Read a book. Visit with your neighbor. Talk politics. Talk prohibition. Get the neighborhood gossip. Swap stories.

In an Elevated car or train you don't have to keep your eyes glued on the road ahead. You don't have to watch for pedestrians to dodge. For the half-hour of your in-town trip in the morning and your home trip at night on the Elevated you are free from worries. No telephones to bother you. No questions to answer. No agents or canvassers to interrupt you. Not even a bill collector. The Elevated provides not only a trip to and from town, but gives you the best guaranteed relief from anxiety you can find anywhere in these rushing times.

Safety: You know that riding on the Elevated is safe. When you travel by the Elevated you don't worry about accidents. Neither does your family. You're safe with the "El." You have already been told of the award of the Anthony N. Brady Memorial gold medal to the Boston Elevated for its safety record of the year 1928, the best in this country. That's a record of which the Elevated is proud.

Let us serve you, with Convenience, Economy, Speed, Ease and Safety.

MORE ABOUT COLDS

By FREDERICK T. LORD, M.D.,
Massachusetts General Hospital

COLDS, sore throats, bronchitis and pneumonia are due to the passing of and are much more common during the colder months of the year.

The cause of colds is unknown. Their greatly increased prevalence during the colder months may largely be ascribed to the increased opportunity for contagion in houses, street cars, theatres, halls, shops, etc. During this period of the year overcrowding greatly increases the danger. Dryness and overheating of the air within doors, lack of sunshine and greater temperature variations at this season may play a part in the increase in the number of cases during the winter months.

Colds, ordinarily regarded as insignificant, are indirectly responsible for much suffering and even serious and fatal illnesses. They may be complicated by inflammation of the middle ear or nasal sinuses. In the histories of patients with consumption it is often noted that the illness is started by a cold. Here the cold apparently may make active a previously slumbering tuberculosis process. Among patients with pneumonia about one-half give a history of a cold and the infection accompanying a cold may favor implantation of the cause of pneumonia (the pneumococcus) into the lung.

The prevention of colds, bronchitis, sore throats and pneumonia is a difficult matter. It is necessary so far as possible to avoid the transfer of infectious material from person to person. Such transfer may take place by contact with moist sputum or utensils used by infected individuals. It may also occur by what is known as droplet infection through inhaling of particles of moist sputum expelled by talking, coughing or sneezing, or of material which through drying may contaminate the air. The sputum should be expectorated into a special receptacle and this should be burned. Drying should be prevented by avoidance of long standing. Droplet infection may be avoided by placing a piece of cloth in front of the mouth during coughing or sneezing and the cloth should be burned.

Patients with pneumonia should be isolated and quarantined to guard others against contact, droplet and dust infection. The isolation of persons with colds, bronchitis or sore throats is not always possible, but the observance of certain precautions is nevertheless desirable. During the acute manifestation while there is fever, the patient should be abed. Handkerchiefs or cloths soiled with nasal secretion should be placed in a paper bag pinned to the bed and boiled before they are handled. Opportunity for drying and distribution as dust of nasal discharges or expectorated material should, so far as possible, be avoided. Soiled handkerchiefs should not be shaken. The dry sweepings of rooms should not be permitted and vacuum cleaners are to be preferred. An abundance of sunlight in rooms diminishes the chance of infection. Board of Health regulations concerning promiscuous spitting in public places should be obeyed. The leaves of books and public documents should not be turned by moistening the finger in the mouth.

Persons with colds, bronchitis or sore throats should avoid unnecessarily close contact with others and, so far as possible, stay away from places where persons congregate. The influence of dust in spreading respiratory infection should be combatted by diminishing the amount of city dust and smoke.

Among other measures which prevent infection are those who tend to improve individual resistance by increasing bodily vigor, such as sleeping with the windows open, spending much time in the open air, cold morning baths followed by friction, sufficient food, avoidance of exposure, overwork and fatigue, a suitable balancing of exercise and rest, and the avoidance of the overheating of rooms, inadequate moisture and bad ventilation.

REGISTER ANY TIME

for

The A B C of the Motor Bus

The A B C of the Motor Car

Just notify the general manager's office of your desire to begin.

THE FRONT COVER PICTURE

"'El' Machine Behind the Scenes" this month is a crane car, shown here in the act of ripping up old track, one of a number of purposes for which this crane car is used. Other uses comprise the setting of steel work in buildings, and of steel and wooden bridge timbers, handling special trackwork, etc. After the recent truck shop fire at the Albany Street shops this machine was pressed into service for placing roof timbers, erecting skylights and other purposes. The machine is occasionally loaned to the City of Boston and was used by the City on the occasion of the water break on Brookline avenue near the Parkway. Here it was of great assistance in placing lengths of water pipe in the trench.

This crane car is of the electric type and the derrick can lift 14,200 pounds at a 12-foot radius. When jacks are placed under the side frame of the truck so as to prevent overturn, the crane will lift 20,000 pounds at a 12-foot radius. The hoist is operated by a 55-horsepower electric motor.

As shown in the illustration the boom can be supplemented with specially equipped derrick legs, or boom-supporting struts, greatly increasing the lifting capacity. These struts are used in pulling up track laid in concrete base and with grouted concrete block pavement, or for other purposes requiring extra lifting power.

This crane car is self-propelled. In transit the struts, which are hinged at the top, are pulled back and strapped to the boom. The boom is then swung around to the rear and lashed to the car body.

BROADENING INTEREST IN BOWLING

A team from the Railway is bowling with teams from the New Haven Railroad, the Boston and Maine Railroad and the American Railway Express Company, for the championship of the local transportation companies. The present schedule calls for the following meetings: Feb. 28, Hawley St. Alleys, March 7, North Station Alleys, March 14, Hawley St. Alleys, at 8 p. m. The "El" team comprises Max Wilson, C. Rose, J. F. McCarthy, Thos. N. Foley and A. Richey, with Wm. Marshall as substitute.

THE SUNBEAM

By Florence H. Fewtrell, Claim Department

A little ray of sunshine
Came to my room one day.
I asked it where it came from
And, "Please, why can't you stay?"

It answered rather shyly
With golden, sunny smile,
"I am a little sunbeam
Just playing for a while."

"I'll stay just right here with you
If you will let me tell
You, when, and why, and wherefore
I sought this little dell."

"Oh, stay," I pleaded gently.
"Oh, sunbeam sweet and fair."
And then in gentle accents
It answered, "Look you there."

I looked, and lo, before me
I saw the sunlit streak
A-shining on my windows
A-playing hide and seek.

I stood there so enchanted
It brought to life the place,
I understood the message,
"A smile will change your face."

SUPERVISORS HEAR JOHN GARVEY

The Boston Elevated Railway Supervisors' Association, T. F. Kivell, president, met on Feb. 19, the speaker being John Garvey, superintendent of personnel Dennison Manufacturing Company, Framingham. Mr. Garvey told of the interesting development of this company, which began ninety years ago with the making of small boxes. Later the founders of the business anticipated and, in fact, created a demand for substantial tags to replace the unsatisfactory home-made varieties previously in use. The business has grown through the application of a similar policy of foresight.

One of the most interesting matters described by Mr. Garvey was the introduction of crepe paper. This was suggested by a woman who had crinkled up some paper for her own use and thought that it might be an attractive manufacturing proposition. The proposition was at first received skeptically but forward-looking officials of the Company saw possibilities in it. Now crepe paper and products made with it constitute a substantial part of the Dennison business.

Mr. Garvey made one of the hits of the evening when he told of his experiences looking for a job. His employer suggested that he could view the job of employing others better if he knew the attitude of other employers towards an applicant for a job. He had a disheartening, but instructive experience. Dressing up in some old clothes he went from

EDUCATIONAL CALENDAR FOR MARCH

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
2	3 3rd-year foreman conferences	4 Principles of Investment	5 Ash Wednesday Lent Begins	6 Forum Speaker: Walter J. Rhodes Works Manager Carter's Ink Co.	7 1st-year foreman conferences	8
9	10 4th-year foreman conferences	11 Transportation Problems (Sect. A)	12 Accident Prevention Effective Speech Practical Supervisory Problems	13	14 2nd-year foreman conferences	15
16	17 3rd-year foreman conferences	18 Principles of Investment	19 Supervisors' Association Athletic Night Transportation Problems (Sect. B)	20 Selling Car Rides	21 1st-year foreman conferences	22
23	24 4th-year foreman conferences	25 Transportation Problems (Sect. A)	26 Accident Prevention Practical Supervisory Problems	27	28	29
30	31 4th-year foreman conferences					

plant to plant, asking for something to do. The period was unpropitious for this quest and he was turned down time after time. After a week of these rebuffs he returned to his own office and job with a more sympathetic attitude towards applicants.

Chairman Kivell voiced the sentiments of the Association in stating that Mr. Garvey's talk was one of the most stimulating that had been heard by the Association. Following the address there was a program of song, recitation and dancing. Before the address a report was received from the secretary-treasurer, showing the finances to be in excellent condition.

Mr. Kivell announced that the next meeting, scheduled for Wednesday, March 19, will be the annual athletic night.

BROADCASTING DISCUSSED AT FORUM

The marvels of national broadcasting were described before the February Forum, held on Feb. 5, under Mr. Dana's chairmanship. The speaker was Frank A. Arnold, director of development of the National Broadcasting Company. Before taking his present place near the head of the broadcasting industry, Mr. Arnold was associated with Frank Seaman, Inc., New York, advertising agency, of which he was secretary and director of sales. He was also national export chairman of the American Association of Advertising Agencies and trade advisor to the National Foreign Trade Council. He was a member of the Mayor's Committee on National Defense in New York City. His career began in Boston in the mercantile business, where he became editor and publisher of the Trade Monthly in 1894. Since then he has occupied increasingly important positions in the publishing and advertising business.

In his address Mr. Arnold traced the development of broadcasting from the pioneer Westinghouse station KDKA in Pittsburgh. The first extensive use of broadcasting was in reporting the presidential returns in 1920.

A small experimental station was opened in Newark, N. J., in 1921, on the roof of a large factory building. An old cloak room became the home of the now famous WJZ. In July, 1922, the American Telephone and Telegraph Company began investigations in this field and established Station WEAF in New York City.

Following the examples of these stations, broadcasting stations appeared all over the country until by August, 1924, 1,105 stations had been licensed. Many of these soon dropped by the wayside on account of the high cost of operation. New ones were started, however, without suitable control, until the establishment of the Federal Radio Commission. The National Broadcasting Company was formed by the above-mentioned two companies and the General Electric Company. The plan was to foster the development of high-grade broadcasting, with the idea that it would ultimately become self-sustaining. Last year $12,000,000 was spent by advertisers and the Broadcasting Company put on many high-grade programs of its own. The Company covers the country with its networks, which comprise specially designed and licensed wires requiring a rental of $3,000,000 per year to the A. T. & T. Co. These lines all centralize in New York.

EDISON-ELEVATED DEBATE PLANS

The public-speaking classes of the Edison Electric Illuminating Company of Boston and the Boston Elevated Railway will engage in a debate this year as last. Representative committees from the two classes are at work upon the details. The "El" committee comprises J. B. Flaherty, J. A. Griffin and W. J. Carney. The debate will probably be held late in April or early in May.

The team selected by the committee comprises Max Ross, general counsel's office; F. L. Sullivan, department of rolling stock and shops, Everett shops; J. A. Griffin, department of transportation; and J. N. McPherson (alternate), department of transportation.

TWO BIG EVENTS IN MARCH

MARCH 6

Boston Elevated Forum

EDWARD DANA, *Chairman*

Speaker, W. J. RHODES, *Works Manager Carter's Ink Company*

MARCH 19

Supervisor's Association

T. F. KIVELL, *Chairman*

"ATHLETIC NIGHT"

CHANGES IN THE RESERVE FUND

Fiscal Year 1928-29
July 1, 1928, $1,000,000

July	$331,329.58*	Jan.	$74,244.54†
Aug.	398,356.82*	Feb.	53,235.38*
Sept.	204,840.30*	Mar.	245,409.29†
Oct.	3,135.31†	Apr.	140,661.08†
Nov.	2,583.64†	May	148,719.82†
Dec.	225,043.06†	June	32,187.99*

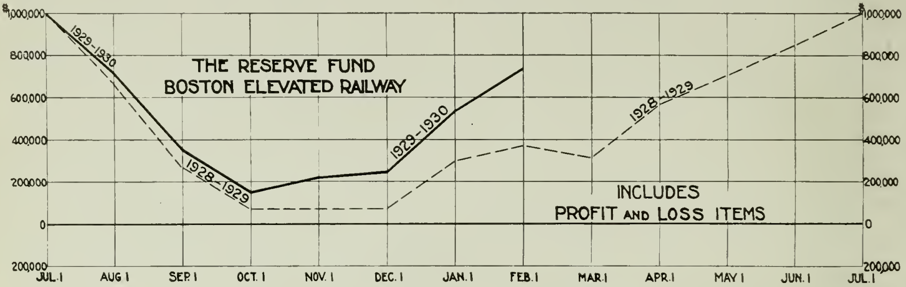
Profit and loss credit........$180,153.33

†Excess of revenue over cost of service.

Fiscal Year 1929-30
July 1, 1929, $1,000,000

July	$285,903.19*	Jan.	$195,210.33†
Aug.	361,650.56*		
Sept.	197,825.11*		
Oct.	164,866.77†		
Nov.	64,148.53†		
Dec.	286,824.84†		

*Excess of cost of service over revenue.



JANUARY OPERATION

	1930	1929
GENERAL FINANCIAL DATA		
Revenue exceeded cost of service	$195,210.33	$74,244.54
Operating revenue per car-hour (A.E.R.A. std.)	$6.23	$6.06
Operating revenue per car-mile operated	61.38c	60.16c
Average fare per revenue passenger	9.243c	9.255c
Ratio operating expense to operating revenue	67.33%	70.16%
PASSENGERS CARRIED		
Revenue passengers	32,419,160	32,038,239
Per cent 5c, 6¼c and 7c passengers	19.25%	19.05%
Revenue passengers per car-mile operated	6.417	6.273
OPERATING FACTS		
Trips operated	653,681	654,205
Car-miles operated:		
Rapid-transit lines	1,521,190	1,529,551
Surface, two-man	1,163,415	1,451,905
Surface, one-man	1,738,183	1,548,928
Motor bus	629,330	576,746
Total miles operated	5,052,118	5,107,130
ACCIDENT DATA		
Accidents per 10,000 car-miles	1.30*	1.54*
Accidents per 10,000 bus-miles	1.636*	2.115*
Revenue passengers carried per accident	22,940	20,220
Average number of witnesses per accident	3.02	3.14
COMPLAINTS AND DEFECTS		
Complaints in regard to car service	72	69
Employees complained of by car riders	100	108
Car defects reported per 10,000 car-miles	3.6	5.0
INFORMATION ABOUT POWER		
D.c. kw.hr. output gross for month	27,823,360	28,922,740
Maximum kw. load	95,740	94,295
Tons of coal consumed for power	22,481	22,672
Lbs. of coal for power per d.c.kw-hr. at cars	1.814	1.760
Operating and maintenance cost of power, including depreciation:		
Per d.c.kw.-hr. for car service	0.788c	0.730c
Per revenue car-mile	4.63c	4.34c
Kw.-hr. per revenue car-mile	5.87	5.943

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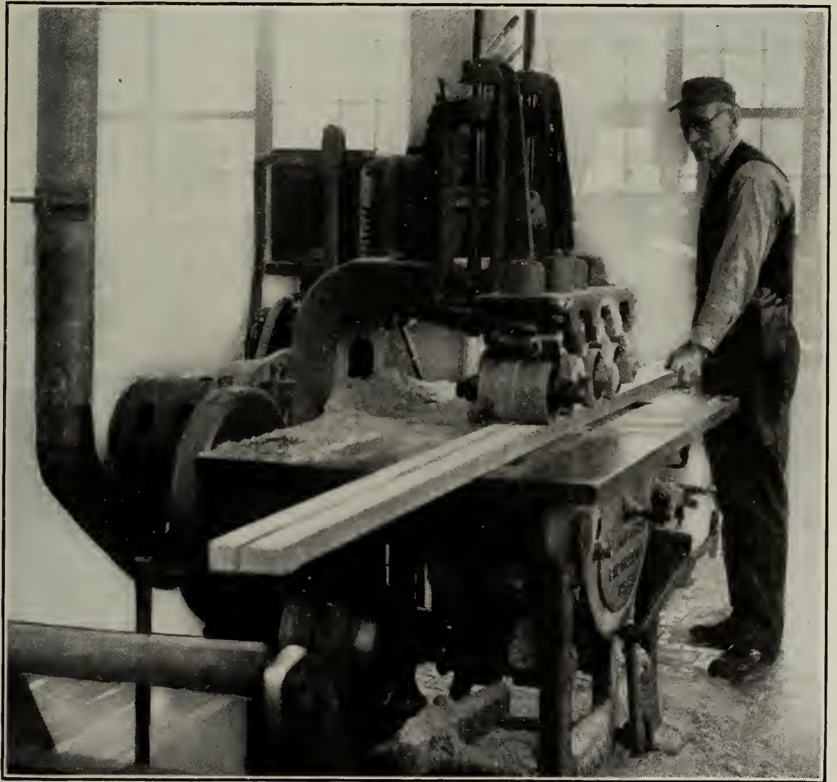
*Does not include miscellaneous accidents or derailments.

Feb. 20, 1930 EDWARD DANA, *General Manager.*

BOSTON ELEVATED RAILWAY
CO-OPERATION

Volume 9 MARCH, 1930 Number 3

"El" Machines Behind the Scenes



A POWERFUL RIP SAW

To All "El" Employees

THE year 1930 will go down in local and national history as the year of the tercentenary celebration of the Massachusetts Bay Colony. It is a patriotic duty to celebrate these hundred-milestones of history, to impress upon all citizens the debt we owe to the founders. There is also an element of legitimate pride in such celebrations. Thus, in 1907, Virginia fittingly celebrated the tercentennial of the founding of its colony at Jamestown; Quebec, in 1908, its founding three hundred years earlier by Champlain; and New York, in 1909, the three hundredth anniversary of the exploration of the Hudson River by the great navigator whose name it bears.

Similarly, in 1882, Philadelphia had its bi-centennial anniversary celebration of the settlement of the Pennsylvania Colony by William Penn. That city also held, in 1876, a great centennial celebration of the Declaration of Independence by the colonies, and a sesqui-centennial celebration four years ago.

Our tercentenary festivities will bring hundreds of thousands of people to Boston; many of these thousands will patronize the "El" and will furnish us with an unparalleled opportunity—

First, to meet interesting people from all over the world, and

Second, to impress them with the quality of the "El" service and the consideration with which it is rendered.

The splendid teamwork with which our whole personnel is "playing the game" justifies the belief that the visitors will go home to sing the praises of our transportation system.

Edward Dana

BOSTON ELEVATED RAILWAY
CO-OPERATION

VOL. 9 MARCH, 1930 NO. 3

TRUCK SHOP REHABILITATED AFTER FIRE

Reconstruction Was Completed in Eighteen Working Days After Fire and Shop Was Ready for Service in Total of Twenty-six Working Days

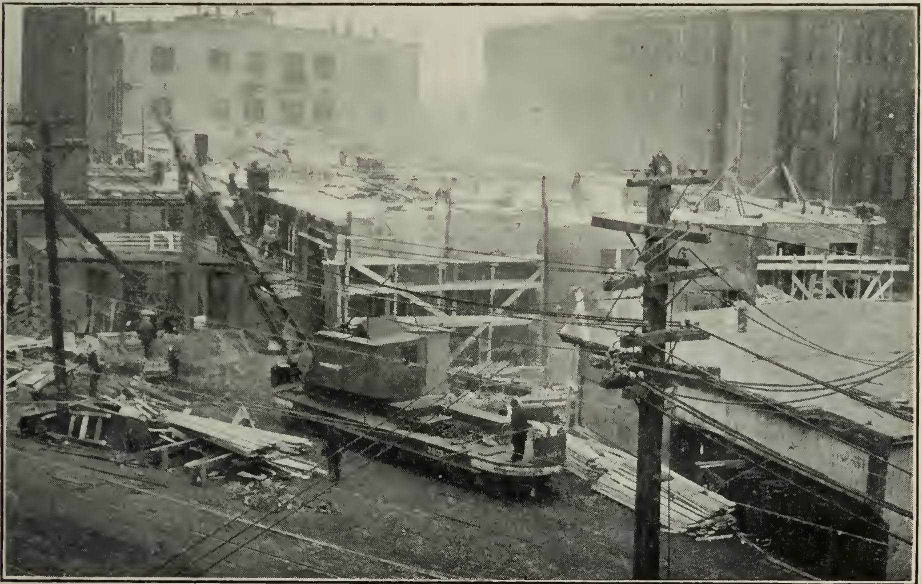
THE truck shop of the rolling-stock and shops department, in the rear of the office building at 439 Albany street, was badly damaged by fire on Feb. 13 and 14. This being the shop where all of the trucks for surface cars receive general overhauling and repairs, it was important that the building be restored and the shop resume operations as soon as possible.

The truck shop is a part of the old Hinkley Locomotive building, which was formerly three stories in height. In 1910 this building was burned, and temporary repairs were made to provide a 1-story shop only. The expectation was, even at that day, that the shop would not be in operation for very many years, as it was anticipated that new general shops would be built.

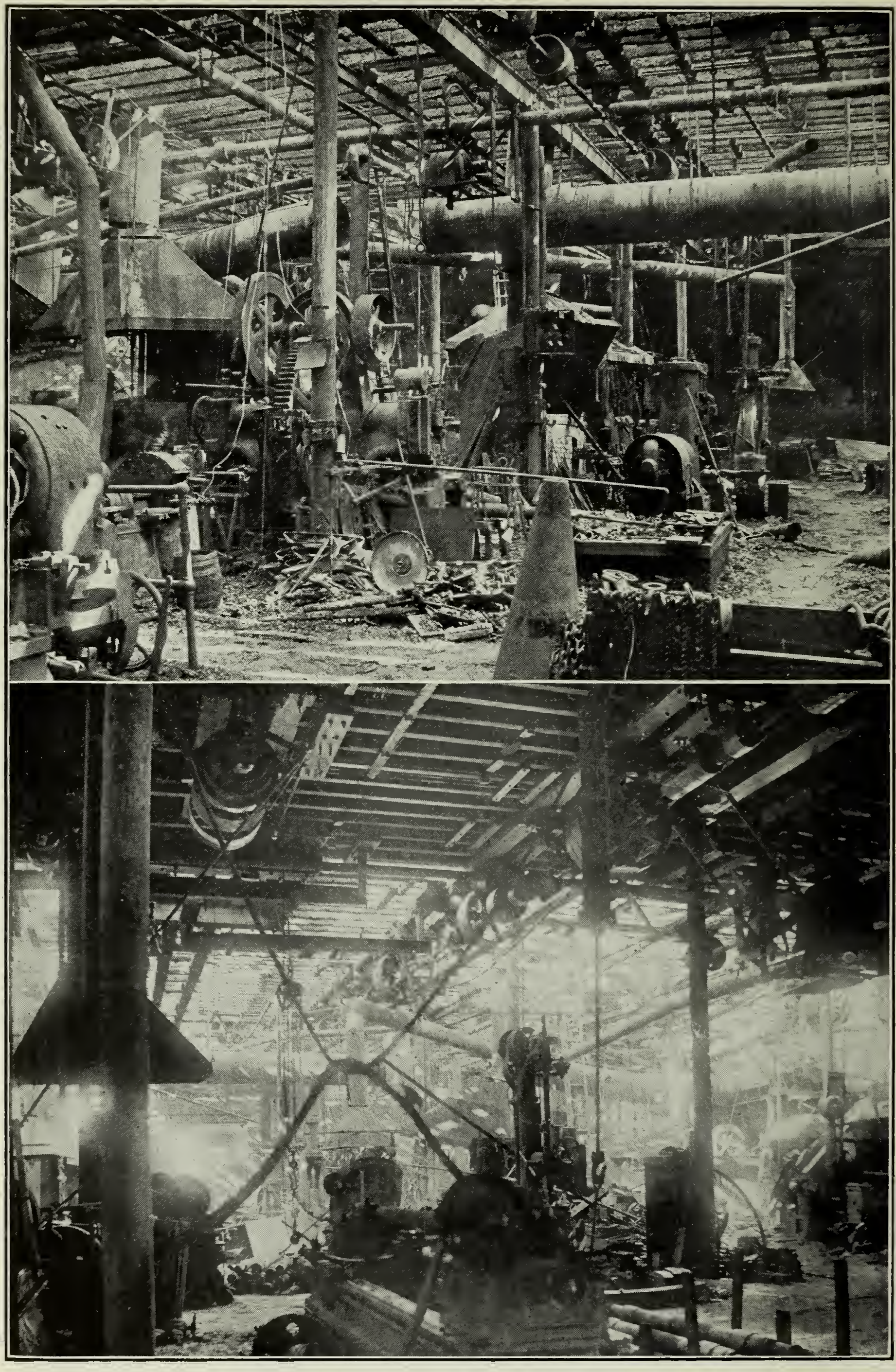
The portion of the building occupied by the truck shop is approximately 81 feet in width and 248½ feet in length. The rear portion had a flat roof, but approximately one-half of the shop, next to the three-story building, had an auxiliary roof over the old floor. On the north side of the building is located the brass foundry, 36 feet wide and 76 feet long. This was also damaged to a considerable extent by the fire.

While the walls of the building remained standing, the roof was entirely destroyed over the greater portion, as well as a part of the wooden floor. Fortunately the cast-iron columns and rolled wrought-iron beams, which were part of the original Hinkley building, were not badly damaged.

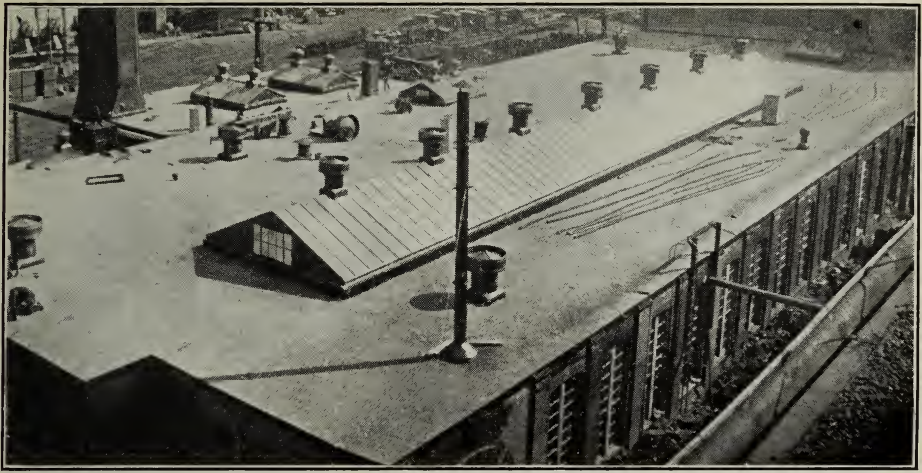
Early in the morning of Feb. 14, the maintenance department started to clear away the debris, using as many men for this purpose as could work to advantage. As the work progressed, three shifts were established, the late afternoon and nights shifts continuing for several days.



A SCENE OF VIGOROUS ACTIVITY



THE TRUCK SHOP LOOKED RATHER UNKEMPT AFTER THE FIRE



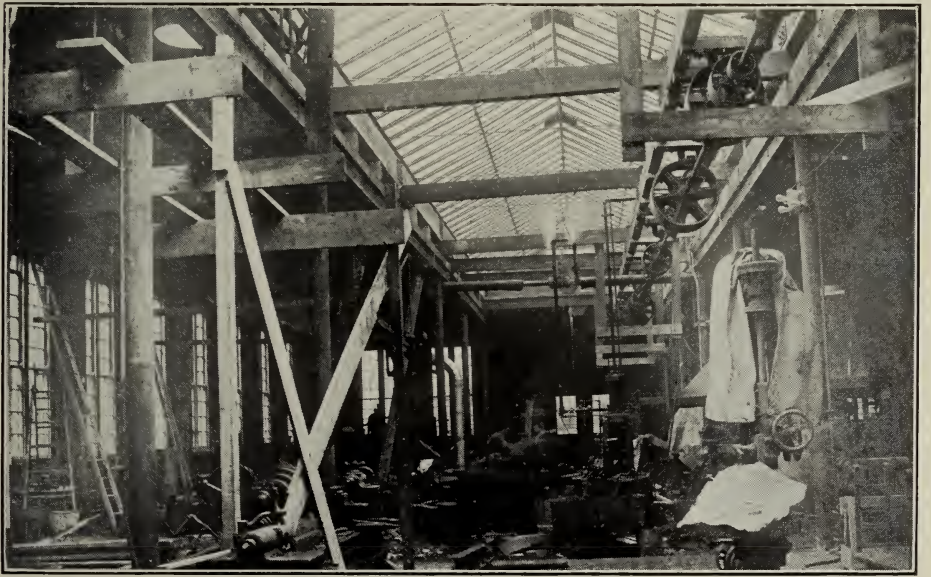
REBUILT SHOP IS WELL LIGHTED

A notable feature was the speed with which the work was done. Eighteen working days after the fire, that is, on March 7, the repairs were completed. The shop was back in commission on March 17, or twenty-six working days after the fire.

In connection with the rehabilitation of the building, fifty-three carloads and four truck-loads of burned lumber, three carloads of scrap metal, and fifty truck-loads of rubbish were removed. The rubbish was taken to the Everett dump, where the combustible portion was burned.

A valuable by-product of the fire has been the opportunity to improve the lighting of the truck shop. As shown in several illustrations, the roof is now well provided with skylights. The main skylight over the truck shop proper is 126 feet long and 19 feet, 2 inches wide. Its construction is well illustrated in the engravings. The lower illustration on this page gives an excellent idea of the interior illumination as it is today.

There are also two skylights, 10 feet by 12 feet in size, on the main roof, and three skylights, 10 feet by 14 feet in size, on the attached foundry roof.



SKYLIGHT IMPROVES WORKING CONDITIONS

NEW ROOF AND NEW FLOOR

The new roof is of mill-type construction, covered with tar and gravel. It was necessary to renew a large section of the floor, a total of 2,166 square feet of floor being removed and replaced.

All of the shafting, both main shaft and jack-shafts, had to be taken down and replaced, and new belts provided for all machines. This work was done between March 7 and March 17. Approximately ½ mile of new belting was required.

The steam piping also was badly damaged and had to be replaced, and the lighting of the building was replaced with modern apparatus.

The building department of the City of Boston, having a good opportunity to make inspection of the building following the fire, required the Railway to strengthen the wooden floor and to support it on suitable foundations, with concrete posts. In the front portion of the building which was not damaged by the fire, the Building Department required the third floor to be removed, which work is now under way.

The building will be equipped with a wet-sprinkler system.

It may be of interest to note the following supplies which were required for the reconstruction: 68,646 feet, board measure. of spruce lumber, 41,117 feet of hard pine; 3,000 bricks; 405 bags of cement; 58 tons crushed stone.

Practically all of the doors and windows, with their frames, had to be replaced, and new skylights, ventilators, etc., had to be furnished.

"EL" NEWS NOTES

Items of Interest Regarding Recent Incidents With Which All Employees Should Be Familiar

SAFETY MEDAL AWARD ADVERTISED

IN order more forcibly to impress the public and "El" employees with the significance of the award to the Railway of the Anthony N. Brady safety medal, the following procedure was instituted: Clerestory cards depicting the medal and stating important facts as to "El" safety were carried in the cars in the latter part of March, and employees were furnished with a small lapel button to be worn on Tuesday, March 18.

A letter to all employees from the general manager, dated March 15, closed thus:

"It is hoped that the display of the Brady button and the cards will further emphasize the splendid safety record of the Railway.

"Wear it as evidence of your co-operation in reducing and preventing accidents."

COOPERATION RECOGNIZED

AFTER the disastrous fire which occurred in Everett on March 14, the general manager sent to the several departments of the Railway the following note of appreciation:

"I am not informed as to the number of men or the particular departments, but I am advised as to the splendid work which a number of our men performed last evening upon the occasion of the Merrimac Chemical Company's fire. This is additional evidence of the cooperation and the spirit of our service. I should be glad if the Department heads would see that these men have conveyed to them our sincere appreciation."

SERVICE ON SPRING STREET AND WASHINGTON STREET LINES TO FOREST HILLS

ON behalf of the trustees Mr. Dana, on March 14, sent to W. D. Cram, news department, Parkway Transcript, Dedham, the following analysis of the service situation on the lines mentioned above:

Careful investigation of street-car service over the Spring street and Washington street lines to Forest Hills has been made, with particular attention to the service between the hours of 6 and 7 o'clock in the morning.

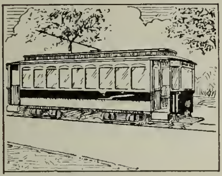
We found that in this morning hour there is no serious over-crowding of the cars on these two lines as far as South street. We did find, however, that beyond South street in the direction of Forest Hills station there was a condition which was unsatisfactory during this morning hour from 6 to 7 o'clock. In order to correct this situation, we have added during this hour three additional trailers furnishing 62 seats each on the Charles River line, one additional trip from the Beech street crossover on Washington street, furnishing 48 seats each, and one additional trip on Washington street from the Dedham line, furnishing 48 more seats. Counts taken after these trips were added have shown that they have relieved the situation during that time. Our tabulations show that during the balance of the day ,the service is satisfactory.

It is well to bear in mind that the people riding from South street to Forest Hills are in the cars for five minutes at the most. It is well, also, to keep in mind that the people taking the car on Washington street between South street and Forest Hills station before 7 o'clock in the morning have the benefit of the Washington street-Dedham line and the Spring street line. After 7 o'clock in the morning these riders have the benefit of two additional lines, the short line from Roslindale square to Forest Hills and a line from the Beech street crossover. Thus, people on this stretch wait only a short time for a car. Our tabulations show that since the additional cars have been put on, the service now fur-

(Please turn to page 55)

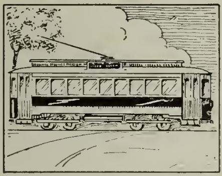
CHANGES IN "EL" ROLLING-STOCK IN TWELVE YEARS

Percentages refer to service based on mileage operated, rendered by the different types of vehicles. Rapid transit is included.



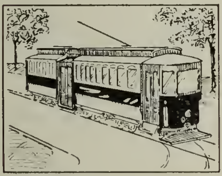
25-ft. Box

1918	26.5%
1927	0.4%
1928	——
1929	——



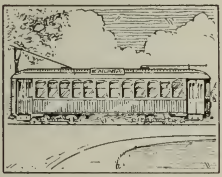
26½-ft. Box

1918	3.4%
1927	0.4%
1928	0.1%
1929	——



Articulated

1918	9.7%
1927	——
1928	——
1929	——



Nos. 1, 2 and 3 "Semi"

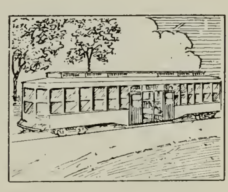
1918	6.6%
1927	1.5%
1928	1.3%
1929	1.0%

No. 4 "Semi"

1918	19.4%
1927	9.1%
1928	8.7%
1929	9.8%

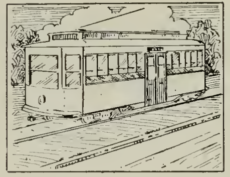
Trailers

1918	3.2%
1927	4.4%
1928	2.9%
1929	2.9%



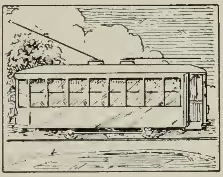
Center-entrance

1918	3.9%
1927	18.3%
1928	17.5%
1929	16.5%



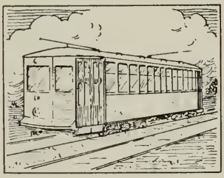
Birney Safety

1918	——
1927	0.4%
1928	0.3%
1929	0.2%



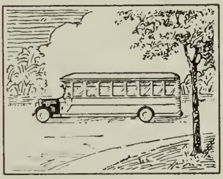
No. 5 "Semi"

1918	——
1927	29.0%
1928	28.7%
1929	26.1%



Motor Buses

1918	——
1927	9.7%
1928	10.4%
1929	12.6%

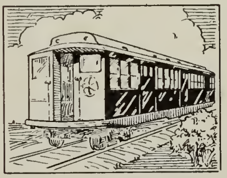


Rapid Transit

1918	25%	1928	29.1%
1927	26.3%	1929	29.9%

Foreign Cars

1918	2.3%	1928	1.0%
1927	0.5%	1929	1.0%



"EL" RADIO TALKS

THE following articles complete the publication of the series of twelve talks which were broadcasted over WEEI during December, January and February. The earlier talks were reprinted in previous issues of "Co-operation." The entire series has been put into the form of an attractive booklet, copies of which will be sent upon request to the general manager's office.

Moving the "El" Cars

(Mr. Moran's Radio Talk of Feb. 11, 1930)

Those of you now grown up remember the little mechanical toy which after being wound up went for a few feet. And, best of all, the train of cars propelled by electricity, running over tracks shaped like the figure 8, and going under subways and through switches and stopping at stations.

This boyhood "stunt" finds its parallel in running a railway system. You have already heard of the "El" tracks and the "El" vehicles. Tonight I shall tell you briefly about what starts and keeps these vehicles in motion. For we might have the finest cars and the best tracks but unless we had a dependable power supply they would be of little use to you.

The power used to move your cars and trains is generated by the "El" itself, because it can do it with efficiency and economy. The entire business of transportation, including the production of the vital force which moves the cars, is encompassed within a single organization, the one which knows best how to co-ordinate the various factors involved in taking you from one place to another.

To move your cars last year, about 250,000,000 kilowatt-hours of electricity was used. With this tremendous energy, one electric car could be operated more than 2,000 times around the earth.

To produce this power, more than 200,000 tons of coal was burned. Quite a substantial heap, considerably larger than the Park Square Building.

The services of 255 men were directly required. The cost of power production in labor and materials was $1,800,000. This will give you some idea of the magnitude of the job of providing "juice" for the "El" cars and trains.

The main generating plants are located on East First street, South Boston, and on Commercial street, Boston. The generating equipment consists of steam turbines of varying capacities, of which the largest is rated at 40,000 kilowatts. This turbine, if used at rated capacity, could furnish illumination for 100,000 homes, a city of substantial size. The rated capacity of the entire South Boston plant would be sufficient to light 300,000 homes.

Part of the boilers are equipped with automatic stokers and in the latest installation of boilers, provision is made for the burning of pulverized coal. In this process the coal is reduced to a powder, like talcum, in front of the boilers and is blown in this form into the furnaces where it ignites instantly, just like gas. At the South Boston power plant, the "El" is producing power at a cost so low as to compare very favorably with the largest power plants in the country.

The power is transmitted in the form of high-voltage alternating current from the generating plants through underground conduits to twenty sub-stations located throughout the territory served by the "El." At these sub-stations the power is transformed into 600-volt direct current and is then distributed through underground cables and overhead feeders to the trolley wires and to the third rail of the rapid-transit system. There it is applied to the motors that propel your cars and trains,

Six of these sub-stations are equipped with that modern marvel of electrical science known as automatic control. The operation of the converting machines is controlled automatically by means of switching apparatus. No attendants are necessary in these six sub-stations. The machines start themselves with the demand for power and automatically shut down when their services are no longer required. At all times, the operation of the sub-stations is under the supervisory control of a power dispatcher located at a central point, who through ingenious devices connected through telephone wires not only knows what is going on in these sub-stations but can control the automatic operation if he so desires.

Even after we have employed all engineering and mechanical skill and devices, and apparently have left nothing to chance, we cannot know in advance what trivial happening will interfere with the power supply. Fate, sometimes even in the tiny shape of a mouse, intervenes, as it did some years ago, to cause a short circuit. Human minds and hands must be trained to the utmost to prevent any slip which will interrupt car service.

In view of the extreme ease and unexpectedness with which trouble can arise, the past record of the Elevated in delays due to interruptions of power is highly creditable. During 1929 there was not one single interruption to car service due to trouble in the generating power stations.

Interruptions to car service traceable to power supply usually arise from breaks in trolley wire. During the last year, there were 127 instances of this kind, which is the lowest number of trolley breaks recorded in any one year. Moreover, included in this number are trolley breaks caused by conditions beyond the control of the Railway, such as wires being pulled down by trucks, steam shovels and derricks.

During 1929, trolley breaks averaged only one for every 250,000 car-miles operated. In other words, if we were to lay tracks from the earth to the moon, and you wanted to go there, the chances are all in favor of your trip being completed without a delay from a trolley break.

In order to reduce trolley breaks to the lowest possible number, the "El" has developed a system of inspection which is based on the theory that after a certain number of cars have passed under a trolley wire, it should be removed because of the danger of a break. Through this system of inspection, interruptions in service attributable to the condition of the trolley wire were reduced by more than two-thirds in the last six years.

The "El" maintains a group of trained men who are constantly testing and observing the transmission and distribution wires and cables, as well as the equipment connected with power supply. Among this number, and those who are most frequently observed by the car rider, are the tower crews. This group is divided into a number of crews who work in shifts covering the 24 hours of the day and night. Forty-five men are assigned to this work.

I hope I have given you a general view of the work of generating and transmitting the power which moves your cars and trains. The "El's" investment in power plant alone is about $18,500,000, and this investment is increased to $25,500,000 when the wire-conduits and other power-carrying facilities are added.

During the period of trustee management, about $5,500,000 has been spent in the development of the power system. In addition to providing modern generating equipment in the power stations, this expenditure provided for the construction of a number of new power sub-stations, which made possible the complete abandonment of three old generating stations and the use of others for emergency power only.

Equipment, methods, trained men, all are co-ordinated to make your trip on the "El" as free from delays as is humanly possible. The "El" wants and deserves your patronage.

The Future Development of Mass Transportation in Greater Boston

(Mr. Harriman's Radio Talk of February 18, 1930)

This talk tonight is not intended to be in any sense a prophecy. It will attempt to outline only what appear to be the reasonable and almost inevitable lines of development in transportation in this growing community known as Greater Boston.

As in many other fields of activity, the immediate future in transportation is governed largely by the immediate past. Boston was the first city in the country to build a subway. To this initial effort have been added from time to time additional subways, elevated roads and high-speed lines on private rights of way, all combining to give to important parts of Greater Boston real rapid-transit lines and today the rapid-transit lines of Boston represent a larger per capita investment than those of any other city in the country.

These lines, as you well know, have shortened tremendously the time taken to go from one part of the city to another and they have permitted a material expansion of the limits of Greater Boston. They have also contributed in a very real sense to property values not only on the outskirts and all along the territory served by the lines but also in the centre of Boston, where the chief business activities are concentrated. Without our present rapid-transit development, Boston would be a much smaller and much more provincial city than it is today.

All this leads to the conclusion that those portions of Greater Boston which are not now favored by adequate rapid-transit lines should be given such facilities.

It is altogether unavailing to state that in recent years the total revenue passengers carried on the Elevated have decreased slightly and to draw from that fact the conclusion that our means of transportation are changing and that additional rapid-transit lines are not necessary. Before drawing any such conclusion, we should analyze the character of the riding on the Boston Elevated Railway and note what changes have taken place. The automobile has reduced materially riding on the "El" on Sundays and holidays and during the summer months. The loss in riding has been largely in that class which may be termed pleasure riding, and when you consider that seventy-nine automobiles are registered for every one hundred families in greater Boston, the wonder is that riding on the "El" has not dropped more than it has. But if pleasure riding on the "El" has decreased, business riding has not, and by business riding I mean the riding to and from work, which is done by the vast majority of the people of Boston into town in the rush hours of the morning and out of town in the rush hours of the afternoon.

The year 1917 shows the largest total riding in the "El's" history. This was the last year of the five-cent fare and a year of intense wartime activity. Yet in 1929 the week-day riding for the five winter months was greater than the week-day riding for the same months in 1917. For the eight months from October to May inclusive, the week-day riding in 1929 was also greater than the week-day riding for the same period of 1917. These figures show conclusively that while there has been a loss in Saturday and Sunday riding and while pleasure riding has diminished, the Elevated is today called upon to furnish more business riding, that is, more rush-hour service than at any previous time in its history. More people are now being carried between the hours of 7 and 8:30 in the morning and 4:30 and 6 in the afternoon than ever before. Moreover, the rush-hour period is shortening rather than lengthening and congestion on the cars is materially increasing during this period.

The only way satisfactorily to transport people during the rush hours is by means of additional rapid-transit facilities. This can be well illustrated by a comparison of the number of people who can be carried by various types of vehicles. Automobiles can deliver in one direction 4100 people within an hour; buses can deliver 7,300; street cars, 13,500; and adequate rapid-transit lines, 60,000 people. In other words, rapid-transit facilities can transport five times as many people as street cars, and street cars three times as many as the private automobile. Furthermore, transportation by rapid-transit lines is safer, speedier, more regular and more comfortable. Moreover, rapid-transit lines carry the people into the less thickly settled sections and enable the population of greater Boston to live under better social and economic conditions.

One of the most needed rapid-transit extensions is along Huntington avenue as far as South Huntington avenue or Brookline Village. Another important need is the extension of the Boylston street subway under Governor Square and the elimination of delays at Cottage Farm Bridge by means of an overpass. Another much required extension is through Somerville to North Cambridge and ultimately to Arlington. Other improvements along fundamental lines are engaging the attention of the authorities designated by the Legislature for that purpose.

It is not possible, nor is it fair, that the entire cost of carrying rapid-transit extensions be borne by the car riders alone. Any such improvements not only benefit the car rider but also real estate either adjacent to, or in the direction of the improvement. They permit an expansion of the district within which people can live and still be within easy reach of the centre of Boston. In this way rapid transit benefits industry and business and wherever rapid-transit improvements have removed street cars from the surface, they permit freer and greater use of the streets by automobiles. Since the benefits from new transportation facilities are so widespread, it follows that the cost of these improvements should in part be borne by the car riders, and in part by others who are benefited.

It is hardly necessary to say that the public welcomes speedier transportation. May I point out the public's response to better transportation in the Dorchester district? Twenty thousand passengers a day are now using the high-speed service between Mattapan and Ashmont, which is far more than was anticipated would use this service at its opening. Forty thousand more passengers are using the Dorchester tunnel daily than did so before the extension beyond Andrew Square. In fact, at present one hundred thousand persons are using the Dorchester extension daily to some point beyond its previous terminus. No better indication of the public's response to rapid-transit facilities can be found than

LIBRARY

in the liberal use of such facilities immediately after they are provided.

Now a word as to the way buses will figure in the transportation picture of the future. The Elevated early recognized the value of the bus as an adjunct to street-car and rapid-transit lines. Today the Elevated is operating more than three hundred buses and twelve and one-half per cent of its total revenue car-miles is represented by this form of transportation.

The service rendered by bus lines is in large part in substitution for service formerly rendered by street cars in outlying sections, and, in my opinion, this use of the bus will expand. In view, however, of the limited number of passengers who can be carried in a bus, it cannot be expected that buses will ever render more than auxiliary service to the backbone of our transportation system, which must be its rapid-transit lines.

In this brief survey, I have attempted to indicate the probable lines of growth of transportation in metropolitan Boston. The need of rapid transit is great, and the people of many sections of the district are entitled to a speedier and more comfortable service than they can have now in street cars upon crowded thoroughfares.

The Public and the "El"

(Mr. Dana's Radio Talk of Feb. 25, 1930)

Adequate transportation is not simply a question of facilities, human and physical.

We might have excellent vehicles, tracks, tunnels and an operating force functioning to the maximum and yet there remains another factor in transportation which must be co-ordinated before the car riders receive the full benefit of their transportation system.

I refer to the car riders themselves. The degree of efficiency with which your transportation system functions depends in part upon the co-operation of the riding public. In many ways you of the riding public can contribute toward better service.

This is perhaps a novel idea to most of you. You consider the Elevated system as a vast organization operating more or less automatically to take you from one place to another. You feel that you need simply to be at a stopping point of an "El" car, train or bus and that the "El" will do the rest.

Did you ever stop to think of the enormous amount of time which is wasted because of various things which the car riders do or fail to do?

Such a little thing is having your fare ready. Think what it means to you and to the other passengers in an "El" vehicle when you present a large bill for change. When the number of individuals involved is taken into account, seconds multiply into minutes before that change is made. To save everybody's time—"Have your dime ready."

Much time is lost when passengers fail to move away from the door. During the rush hours there are bound to be cars that are filled. It is so in all cities. With willingness on the part of the riding public to move a little, the cars are able to get away more quickly and passengers can get on and off the cars more easily. Everybody saves time.

When a crowded car comes along what good does it do to force your way into it? You simply add to the slowing-down process. The following car which very likely has seats in it will catch up to the leader. The second and succeeding cars are then delayed by the first car. I have recently made personal observations during rush hours from one end of a line to the other. In some cars during the rush hours I have seen empty seats, whereas in others persons suffered from intolerable discomfort because some insisted upon over-crowding the cars. Isn't it wiser to wait for another car and get home or to work more comfortably and at least as quickly?

The cause of delays to service is not visible to most of the people who are affected. Whenever a delay occurs, we want you to have confidence that, regardless of the cause, we are aware of what has happened and are doing our utmost to correct and overcome it. We know the irritation and inconvenience that delays cause and we are anxious to prevent them and to overcome them quickly. Remember that when the first car arrives after a delay, it means that the line is clear and that other cars will follow shortly.

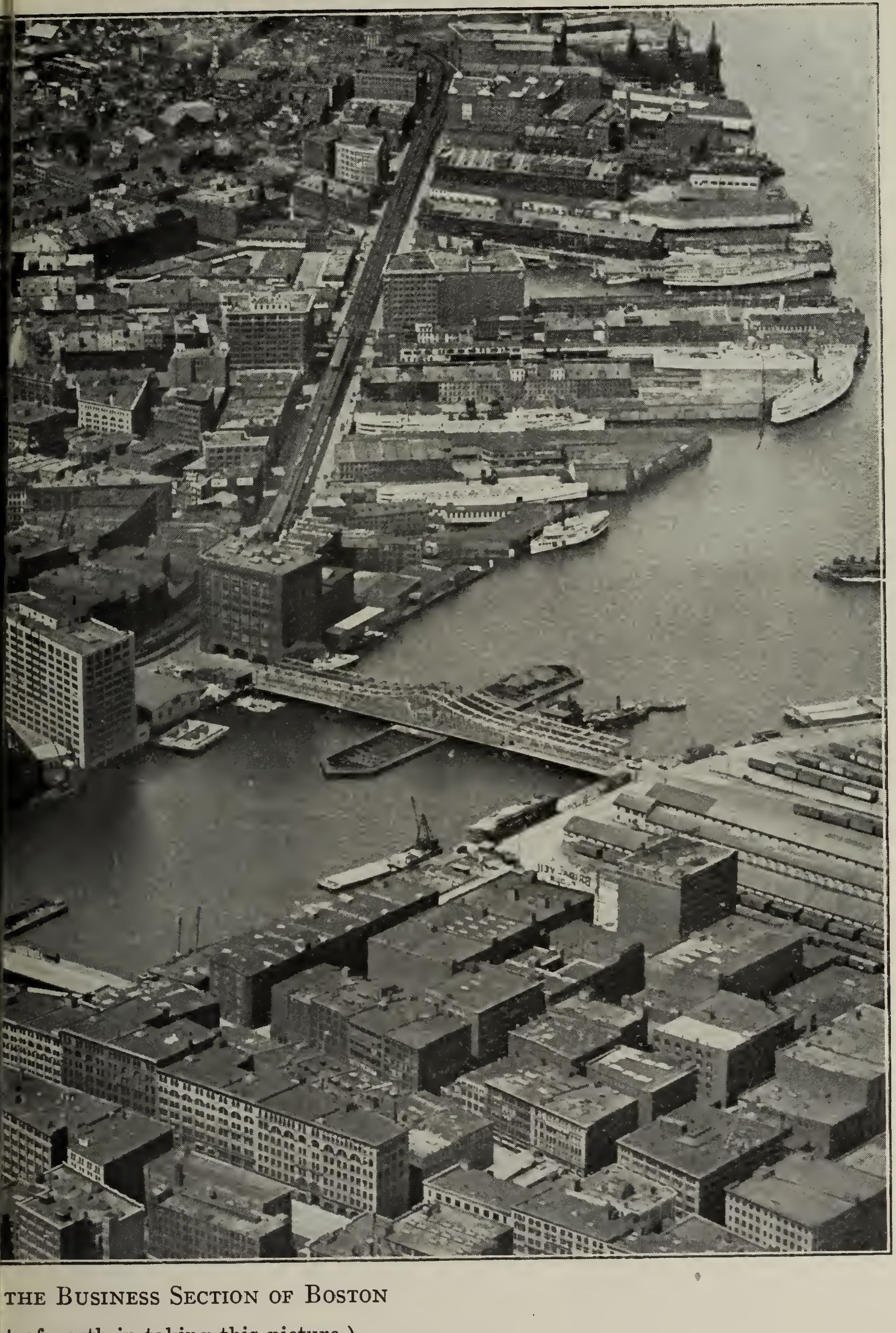
The automobile-riding public, who frequently are car riders, can contribute to more efficient operation of the "El." For example, I have seen a double line of automobiles parked on Boylston street between Arlington and Berkeley streets. Every Elevated car was required to stop because automobiles, in order to get by the double line of parked motor cars, were forced to cut on to the tracks in front of the street cars. The car riders on the lines affected had no idea of the cause of the delays.

I have used only a few illustrations of ways in which the car riders and the

(Please turn to page 54)

Aeroplane View of a Large Part

(The camera was pointed somewhat



the Business Section of Boston

st of north in taking this picture.)

motorists can help bring about greater efficiency in the operation of the "El," a transportation system in which all have a vital interest. All that we ask is a willingness on your part to co-operate in ways which are obvious to you so that you will help yourself and others.

Fundamentally this involves your good will toward the Railway. In all sincerity I can say that the management and employees are striving to their utmost to deserve your friendly feeling. Aside from the satisfaction of having people know that you are doing a good job, a co-operative spirit on your part has a very real value in the efficient operation of a street railway. No transportation agency can function with full efficiency unless it has the confidence and co-operation of its patrons.

The single purpose of the management and men of the Boston Elevated Railway is to give you satisfactory service. I trust that to a very large degree we are fulfilling that purpose.

The service on the Elevated as a whole is good. In most sections where service can be materially improved, the fundamental solution is extension of rapid transit.

Pending such extensions to these sections, men and management are striving to give the utmost in service with the existing facilities.

Let me stress again the opportunities available to thousands of people to use the Elevated to a greater extent. In the coming spring and summer months, motorists from the north and south shores can find no quicker and more comfortable way to reach the centre of Boston than by using their automobiles to one of the outlying rapid-transit stations, parking their cars near these stations, and using the "El" system in town. Moreover, an opportunity for saving time exists in the use of the rapid-transit lines for a part of your trip. Regular riders should study and try out routes which take advantage of the rapid-transit lines. Our guide and information bulletin will help you in this respect. Get one at the information booth in the Park street station or write to us for one.

Tonight we conclude the radio talks of this series. We have attempted briefly to give you some idea of the significance of the Boston Elevated, of its tremendous improvement in the last ten years, of its present efficiency, of the many factors involved in taking you from one place to another, of the desire on the part of men and management to render the best possible service, and of the probable development in the near future to meet the transportation needs of growing Boston.

These talks present a comprehensive review of transportation in Boston. We will be glad to send you, upon request, a booklet containing all of these talks.

I hope that the talks have given you a better idea of the facilities of the "El" and that they have pointed out ways in which you can use them to a greater extent. I hope, too, that they have given you an insight of the problems facing the Railway in providing good service, and have made you sympathetic with the aims and objects of the Elevated. We ask your co-operation, both as car riders and automobile drivers, to the end that the large body of car riders will receive that maximum efficiency of service to which they are entitled.

ELEVATED-EDISON DEBATE

The topic selected for the debate between the public-speaking classes of the Edison Electric Illuminating Company of Boston and the Boston Elevated Railway is, "Resolved, that Boston should be expanded to include all cities and towns within a radius of fifteen miles."

The Edison class will uphold the affirmative of this question.

The debate will be held in Union Hall, 48 Boylston street, on Thursday evening, May 8, at 8 P. M. The Elevated team will comprise Max Ross, general counsel's office; F. L. Sullivan, Everett shops; J. A. Griffin, Supervisor Div. 3, with J. N. McPherson, starter Div. 4, alternate.

All employees are welcome to attend the debate.

COLLISION DATA CORRECTED

On page 25 of the February issue of "Co-operation" occurred a quotation from the Massachusetts Safety Council Bulletin regarding accident reduction on the "El." The figures as to collisions were reprinted from the Bulletin without checking. The statement should read: "The road has been working consistently to reduce its collisions. They numbered 7,200 in 1927: were reduced to 5,900 in the year following; were 4,900 last year."

35-YEAR SERVICE PIN FOUND

Lieut. C. H. Brown, Room 74, Custom House, advises that a Boston Elevated 35-year service pin, with seven stars, was found on the Commonwealth Pier on Aug. 30, 1929, the day the S.S. Republic sailed. The owner can recover his pin by calling upon Lieut. Brown.

“EL” NEWS NOTES

(Continued from page 46)

nished is adequate to take care of people all along the lines. Of course, during the rush hours it is impossible to operate enough cars to furnish a seat for every passenger. The accepted standard during rush hour riding is for a 50 per cent overload, that is, 50 per cent more passengers than the seating capacity provides. Our recent tabulations indicate that the service now maintained will keep within this standard provided the cars are operated upon the schedule laid out.

We are following this line very carefully. If more service is found necessary in order to take care of the passengers satisfactorily, we shall operate more cars.

We have also studied the service rendered by the bus running between Washington and Grove streets and Lagrange and Vermont streets. We find that most of the trips on this route carry only a few passengers, except for the morning trip when the school children are using the bus. The buses on this route operate upon a one-half hour schedule.

On last Friday, March 7, the total number of passengers, except transfer passengers, carried during the entire day was 598. We operated that day thirty-seven round trips. This means that the average number of cash passengers carried was sixteen per round trip or eight per half trip. On numerous of these half trips no passengers were carried. To these passengers should be added the transfer passengers. In addition to the regular half-hour service maintained over this route, we run one extra trip in the morning and one extra trip in the afternoon to take care of the school children. From these figures it is perfectly apparent that the riding does not warrant additional service.

Cars over Centre street operate during the rush hours every 5 minutes, during normal hours every 6, 7 and 8 minutes. From 12 to 1 o'clock in the early morning cars run every 10 minutes; from 4 to 5 o'clock in the morning, every 15 minutes; and from 5 to 6 o'clock, every 10 minutes. From this schedule, it is clear that riders do not wait 15 minutes for a trolley “during the day,” except in rare cases of unusual delays.

Your correspondent inquires why the schedules of the buses and the street cars cannot be so arranged that the cars meet the buses and the buses meet the cars. With the cars operating on a schedule of from 5 to 8 minutes for the larger part of the day and with the buses operating on a 30-minute schedule, it is impossible to arrange schedules so that the cars and buses be timed to make connections. In view, however, of the frequency of car service on Centre street during most of the day; the wait would usually be very short.

We believe that the bus service furnished over this route is all that is warranted by the riding and that the number of cars operated over the Spring street line is sufficient to satisfactorily take care of the travel.

Your correspondent suggests that the bus route be extended to Lasell or Brook Farm road. The total time taken for a round trip on the present route is 24 minutes. This allows only three minutes to make the necessary turns at either end of the route. It would be impossible to operate this bus further and give a half-hour service over the present route. To go to Lasell or Brook Farm road would mean the addition of another bus and operator. This would double the expense of running the route. In view of the light patronage of the present route, and of the very few persons who would be accommodated by the proposed extension, it is impossible to extend the line by reason of the expense which would be involved.

“EL” DIRECTORS PLEASED

THE general manager recently received the following letter from William L. Barnard, secretary of the board of directors of the Boston Elevated Railway Company:

“I take great pleasure in transmitting by direction of the Board of Directors the following vote adopted at its meeting on February 28:

“ ‘The Secretary called the attention of the Board to the recent award to the Boston Elevated Railway Company of The Anthony N. Brady Gold Memorial Medal by the American Museum of Safety in recognition of the splendid record made by this Company as “doing the most to conserve the safety and health of the public and its employes” during the year 1928.

“ ‘On motion duly made and seconded, it was

“ ‘VOTED: To express to General Manager Edward Dana, and through him to all employes of the Corporation, our pleasure at the splendid record achieved during the year 1928 in the conservation of the safety and health of the public and our employes.’

“In the confident hope that with the continued fine cooperation of the employes under your able direction this fine record may be maintained, I am,

WILLIAM L. BARNARD,
Secretary.”

STANDEES IN BUSES

GENERAL MANAGER DANA, on March 13, sent to the editor of the *Boston Post* and the editor of the People's Forum, *Boston Traveler*, a letter explaining why it is to the advantage of bus patrons to permit a restricted amount of standing. The letter follows:

May we, in reply to a letter which appeared in this morning's Post (Thursday, March 13), set forth the reasons why the Boston Elevated Railway has petitioned the city governments of Cambridge and Boston for the right to allow “standees” in buses up to 25 per cent of the seating capacity?

Let us state precisely what the petition means. It would allow “standees” in buses to the extent only of 25 per cent of the seating capacity. In the largest buses seating 40 passengers, this would mean additional accommodation for ten passengers. In the smallest buses, with a seating capacity of 25 passengers, the petition would permit six additional passengers to be carried.

The simple and single purpose of the Boston Elevated in making this request is for the accommodation of a few people during the periods of rush-hour travel only. If this right were granted, a few people, who now must wait for a following bus, could find accommodations. Those who do not wish to stand could still wait for the following bus, as they do now. In the cities and towns where we now have the right to accommodate “standees,” experience has shown that there

(Concluded on page 59)

THE INDUSTRIAL BACK

**By a Staff Member of the Orthopedic Department,
Massachusetts General Hospital**

THE back injury of industry has for years stood out as a baffling problem to the injured, to the industrial surgeon, to the industrial insurer, and to the employer. The financial loss to industry from the industrial back can be computed only in millions of dollars.

NATURE OF INJURY

Muscle strain and muscle contusion comprise the majority of back injuries of industry. Strain, from the medical standpoint, occurs in muscle as a yielding of its structure beyond its natural limit and up to the point of gross rupture. The yield takes place usually at the attachments of the muscle to bone, but may occur along the course of the muscle fibres where these attach to the fibrous envelope of the muscle. The yield of strain results in congestion and later minute scarring. Strain must be differentiated from sprain of muscle, a more serious injury essentially where the force carries the muscle rapidly beyond the yield point and the part actually "necks in" and a tear or rupture occurs.

Muscle contusion results from a blow or impact. The changes in the muscle structures are essentially the same as in strain, namely, congestion and later scarring. Or if the force of impact be great, there may be gross rupture of tissue with frank hemorrhage and later scar formation, as in severe sprain.

WHERE INJURY OCCURS

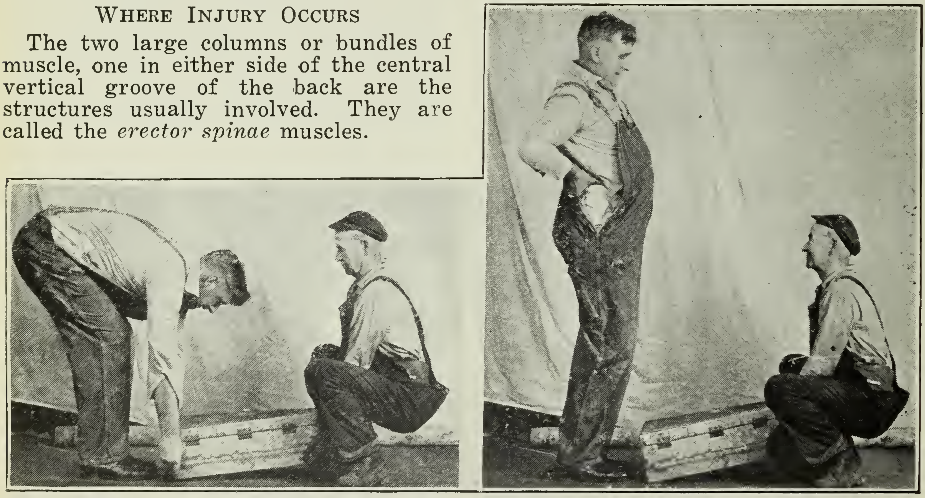
The two large columns or bundles of muscle, one in either side of the central vertical groove of the back are the structures usually involved. They are called the *erector spinae* muscles.

The industrial back is injured further by strain of one or the other *sacro-iliac* joints. These joints underlie the buttocks, one on either side and are directly supported by ligaments alone. Here, the strain affects the ligaments rather than the muscle tissue. They strain beyond their elastic limit but do not rupture as in sprain.

In order to understand the causes operating to produce injuries of the two above mentioned classes, it is necessary to appreciate how the laboring man does his work. The industrial routine of most general laborers entails repeated lifting of articles weighing 25 to 100 pounds, day in and day out, year in and year out. Usually the lifts are between two and three feet in height and involve lifting from the floor or ground. Almost invariably the lifting is done with the two large columns of back muscles above mentioned, the *erector spinae* muscles. These act upon the spinal column, the lever arm, while the legs are used as props to support the base of the spine, the fulcrum. This arrangement is essentially a third-class lever—the most rapid, but the least strong.

In order that the hands may reach the floor or ground, the back is bent forward, almost to the limit of its flexibility, and the *erector spinae* muscles are stretched to their greatest length. In

(Please turn to page 63)



HOW NOT TO LIFT AND HOW TO LIFT
The big fellow still has something to learn

THIRTY-YEAR EMBLEMS AWARDED

THE number of long-service emblems which are being worn by those who have been with the Railway thirty years or more was nearly doubled on March 5, 1930. On that date the management presented solid gold emblems to 437 men and women. See table below. A letter of appreciation, signed by the general manager, was sent to each recipient. The Boston Elevated Railway is fortunate in its personnel, the average term of employment of which is high. Each year it becomes higher because so few new employees are added at the bottom of the list.

BUREAU OF AUDIT

Michael H. Cullen, asst. general auditor.

GENERAL COUNSEL'S OFFICE

Charles B. Gleason, attorney.
Katherine L. Kettell, stenographer.

GENERAL MANAGER'S OFFICE

Ernest S. Lent, clerk.

LEGAL DEPARTMENT

Louis Butterworth, Claims attorney.
Wallace P. Lyons, Court attorney.
Thomas J. Morrissey, Court assistant.
James W. Rourke, Court assistant.

MAINTENANCE DEPARTMENT

F. C. Bell, Asst. engineer.
J. Boyle, Carpenter.
T. J. Connor, Bridge operator.
T. Coursey, Toolwagonman.
J. Curran, Trackman
W. W. Darling, Wireman.
H. J. Davies, Carpenter.
J. Dent, Switch repairman.
W. Devine, Foreman.
J. C. Dibblee, Carpenter.
P. Feeney, Foreman.
C. S. Floyd, Clerk.
J. Foley, Foreman.
W. E. Goss, Draftsman.
J. Grady, Trackman
J. Hamilton, Chief electrician.
H. C. Hartwell, Engineer.
C. F. Hersey, Asst. storekeeper.
J. Joyce, No. 1, Trackman.
M. Logue, Foreman.
D. S. MacLaughlin, Chief clerk.
C. Mahoney, Toolwagon man.
R. D. Maier, Photographer.
W. I. Mather, Draftsman.
S. C. Mitchell, Asst. engineer.
J. J. Mooney, Track cleaner.
M. Mulkern, Trackman.
D. McCarthy, Foreman.
V. McDonald, Foreman.
A. Pugh, Truck driver
D. E. Quigley, Switch repairman.
A. G. Reynolds, Cost clerk
T. Ridge, No. 1, Trackman.
P. W. Rowell, Photographer.
J. M. Ryan, Engineer, surface lines.
D. Sullivan, Track repairman.
P. Sullivan, Toolwagon man.
D. Tulliani, Trackman.
E. Walsh, Track cleaner.
F. G. Weigman, Asst. engineer.
M. Welsh, trackman.
G. E. Woodward, Foreman.

PAY ROLL DEPARTMENT

Walter S. Richards, Chief pay roll clerk.

POWER DEPARTMENT

J. W. Allen, Electrical engineer.
Charles E. Anderson, Boilerroom foreman.
A. S. Beeton, Asst. storekeeper.
Charles E. Bishop, Attendant.
Samuel D. Bond, Oiler.
Wm. H. Burrell, Chief system operator.
John D. Connelly, Head Lineman.
Edward Delaney, Groundman.
Frank Doyle, Attendant.
Warren E. Foote, General foreman.
Harry B. Haywood, Foreman.
Bernard Kirk, Lineman.
Richard Mager, Line foreman.
Alden P. Marsh, Inspector.
John McCarthy, Watch engineer.
Dougal McInnis, Inspector.
Frank C. McKenney, Machinist.
George McLeod, Maint. electrician.
Mark J. Wilcox, Cable splicer.

ROLLING STOCK & SHOPS DEPARTMENT

Frank Burns, Car cleaner.
George A. Burton, Foreman.
Dennis J. Callahan, Foreman.
Wm. J. Campbell, Mach. spec.
Michael Carney, Repairman.
John Clark, Car cleaner.
John J. Coleman, P. H. gen. man.
William J. Coleman, Painter.
Dennis C. Coyne, Repairman.
Timothy Crowley, Repairman.
Charles A. Cuzner, Night foreman.
Stewart Dalzell, Shifter.
Frederick L. Dippel, Asst. foreman.
Anthony Dunleavy, Repairman.
Patrick J. Fitzgerald, Repairman.
Patrick M. Galvin, S. R. clerk.
Arthur P. Garibaldi, Foreman wireman.
Thomas J. Gillen, Repairman.
John Gunning, Shifter.
George H. Harvey, Patternmaker.
Jeremiah Hayes, Painter.
Michael J. Hayes, Repairman.
John L. Herrett, Sub-foreman.
Patrick Kedian, Yard foreman.
William Lindall, Coa. cl. insp.
Timothy Lyons, Shifter.
Daniel S. MacKay, Supervisor.
John MacKeigan, Carpenter.
John Mallard, Night foreman.
James Marr, Ser. car man.
John S. Murray, Arma. winder.
Edward McCabe, Car cl. insp.
Thomas S. McLean, Asst. foreman.
John McNeil, Painter.
David J. Neville, Gen. helper.
A. R. Oberacker, machinist.
James O'Brien, Repairman.
Lawrence J. O'Keefe, Asst. foreman.
Napoleon A. Page, Repairman.
Frank Penders, Machinist.
George H. Ripley, Mach. spec.
Jacob C. Schmidt, Machinist.
John J. Shea, Painter.
John Silvey, Blacksmith.
Edwin A. Smith, Upholsterer.
Fred G. Smith, Painter.
Michael Stack, Watchman.
Louis Strecker, Machinist.
Andrew Sundborg, Machinist.
Edward A. Wetmore, Watchman.

TREASURY DEPARTMENT

W. P. Brown, Rec'g cashier.
F. W. Converse, Collector.
H. A. Hastings, Chief change dis't.
J. F. Henderson, Paymaster.
F. Irving Howe, Paymaster.
W. H. Meade, Collector.
J. C. McGinley, Station rec'r.
D. J. Ryan, Station rec'r.
H. F. Stone, Collector.
F. H. Webb, Station rec'r.

TRANSPORTATION DEPARTMENT

Park Square Building

Isaac C. Austin, Time-table constructor.
Ernest S. Hopkins, Information and report clerk.
E. A. Kelley, Asst. to supt. of trans.
Joseph H. McCarthy, Chief clerk.

Employment & Training Division

James C. Barrie, Instructor.
Miles H. Bentley, Instructor.
William F. Warner, Instructor.

Safety Division

Hugh J. Duffy, Safety inspector.
George O. Goodwin, Safety inspector.

Rapid-Transit Division

William Ahern, Starter 2 cl.
Murray B. Alward, Motorman.
C. H. Appleyard, Train starter.
Herbert A. Bagley, Yardmaster.
Robert L. Black, Motorman.

George W. Browne, Inspector.
Richard J. Burke, Guard.
Jeremiah A. Burns, Starter 2 cl.
Joseph F. Burns, Starter 2 cl.
Harry R. Creed, Warder.
Melville C. Crowdis, Warder.
John P. Crowley, Platform starter.
John F. Curley, Information clerk.
David A. Dennison, Motorman.
Michael J. Dockray, Information clerk.
Michael A. Dolan, Starter 2 cl.
Miss Elizabeth F. Dorr, Collector.
Christopher J. Dwyer, Motorman.
Hector M. Fraser, Motorman.
Thomas J. Galvin, Starter 2 cl.
Edward A. Gardner, Warder.
David L. Grant, Warder.
Patrick J. Hart, Gateman.
Michael E. Hourihan, Starter 2 cl.
Benjamin F. Isaacs, Warder.
Thomas Kelleher, Gateman.
George W. Knapp, Motorman.
James Lynch, Starter 2 cl.
Thomas J. Lynch, Inspector.
P. E. Maw, Supervisor.
Patrick J. Morgan, Motorman.
Shepard Morse, Warder.
Frank McAllister, Starter 2 cl.
William H. McKenney, Yardmaster.
James J. Nolan, Switchman.
Edgar Odekirk, Train starter.
Charles O'Neil, Motorman.
Patrick O'Neill, Motorman.
Christian Peterson, Inspector.
Albert J. Pickard, Motorman.
Ernest Rothschilds, Porter.
Asa R. Russell, Inspector.
Thomas J. Ryan, Warder.
John Seption, Porter.
Dennis Shea, Inspector.
Ernest W. Starrett, Gateman.
Cornelius Sullivan, Starter 2 cl.
Andrew S. Thomson, Motorman.
Frederick W. Ward, Motorman.
Patrick J. Welch, Starter 2 cl.
Charles H. Wiggin, Motorman.
John A. Wiltshire, Motorman.

Division 1

A. R. Atkinson, Cond. oper.
Michael Beades, MM. oper.
Albert S. Brigham, Conductor.
John T. Cahill, Conductor.
Daniel A. Cameron, MM. Oper.
John F. Carey, Motorman.
William F. Casey, Conductor.
Albert P. Cass, Inspector.
Thomas J. Cloonan, Motorman.
Bernard Coan, Motorman.
John J. Concannon, MM. oper.
Coleman J. Conley, Conductor.
Phillip J. Corbett, MM. oper.
Andrew D. Crimmins, Motorman.
Edward H. Dana, Inspector.
Michael J. Deacey, Starter.
Charles H. Dillihunt, Starter.
Patrick C. Doherty, Cond. oper.
Hugh H. Dolan, Motorman.
Timothy E. Driscoll, Conductor.
Manual Dunn, Conductor.
Cornelius J. Farrell, MM. oper.
Matthew J. Foster, Cond. oper.
Allan Gillis, Motorman.
Joseph A. Grace, Starter.
John Graham, Motorman.
John P. Groves, Motorman.
Hugh H. Healey, Motorman.
Henry Heinstein, Conductor.
William Hodgson, Motorman.
Thomas J. Keefe, MM. oper.
James T. Kennedy, Conductor.
Thomas F. Kennedy, Inspector.
Patrick Keough, Motorman.
James Kerrigan, Motorman.
Martin A. Kilduff, Motorman.
Oscar H. Leonard, Conductor.
John Lofgren, MM. oper.
Bernard Lyons, Motorman.
James Martin, Starter.
Arthur C. Mullen, Motorman.
John Myers, Cond. oper.
Bernard C. McArdle, Conductor.
Michael McCarthy, Motorman.
Ernest E. McClenathan, MM. oper.
Charles F. McCoy, Conductor.
Hugh McDonald, Motorman.
Ira A. McLeod, Cond. oper.
Ronald D. McLeod, MM. oper.
Mathias W. Nelson, Motorman.
John Newell, Janitor.
Cornelius J. O'Brien, MM. oper.
Bayard S. Osborne, Conductor.
Roscoe L. Potter, Inspector.
Arthur E. Root, Starter.
Daniel C. Ryan, MM. oper.
Daniel P. Shane, Motorman.
William E. Smith, MM. oper.
John J. Sullivan, Motorman.
George A. Whipple, Cond. oper.
Charles H. Wotten, MM. oper.

Division 2

Augustus Ahlgren, Motorman.
Thomas F. Barrett, Starter.
Alfred E. Bill, Motorman.
Henry T. Bown, Starter.
Joseph A. Boyd, Motorman.
Zadoc F. Brewster, Operator.
Joseph G. Brookings, Starter.
Henry S. Brown, Motorman.
Charles G. Burns, Conductor.
George F. Chick, Operator.
George F. Cochrane, Operator.
John D. Cole, Motorman.
James F. Collins, Operator.
William F. Connell, Starter.
Patrick Cronin, Operator.
William P. Delaney, Operator.
Robert Dick, Operator.
William A. Ebbs, Operator.
John Finnegan, Conductor.
Thomas Finneran, Motorman.
John Fitzmorris, Motorman.
James J. Ford, Motorman.
John H. Grant, Motorman.
James Harnedy, Motorman.
Fred W. M. Harrington, Operator.
John D. Hartnett, Operator.
George W. Hickey, Operator.
Clarence W. Hicks, Motorman.
Almond W. Howard, Starter.
Frank C. Hubner, Operator.
John J. Kean, Motorman.
Thomas P. Maloy, Operator.
John Matthews, Operator.
John D. Mitchell, Operator.
Edward H. Moore, Operator.
John J. Morris, Motorman.
Albert F. Muller, Starter.
Morris Myers, Conductor.
Angus McCallum, Motorman.
David McGrath, Operator.
Robert S. McLelland, Operator.
John D. R. McLeod, Motorman.
Francis H. McManus, Motorman.
Robert McPherson, Operator.
Patrick J. Norton, Station master.
Hazen A. Ogilvie, Operator.
Herbert R. Phillips, Motorman.
Abbott L. Pierce, Conductor.
Dennis Regan, Operator.
Hiram R. Rowe, Operator.
Peter F. Ryan, Conductor.
Isaac Silverstein, Operator.
Samuel M. Smith, Motorman.
Charles H. Stock, Operator.
Charles M. Story, Motorman.
John J. Sullivan, Switchman.
William K. Taft, Starter.
Edward W. Taylor, Operator.
William A. Tower, Motorman.
Frank S. Turner, Operator.
Harold B. Wright, Starter.

Division 3

Magni Allen, MM. Oper.
John Ayers, Conductor.
William J. Baker, Cond. oper.
Stephen P. Bowen, Supervisor.
Marshall H. Boyer, Motorman.
Maxwell J. Brenton, MM. oper.
John F. Broderick, MM. oper.
Jeremiah Buckley, Motorman.
Robert Burr, Motorman.
Henry F. Center, Cond. oper.
James W. Cornwall, Motorman.
Maurice Dineen, Conductor.
Leverett E. Ells, Cond. oper.
Richard F. English, Motorman.
David A. Evans, Cond. oper.
John B. Fallon, Motorman.
Donald Finlayson, MM. oper.
Edward G. Fitzgerald, Conductor.
John T. Fitzgerald, Motorman.
Michael J. Fitzgerald, Conductor.
Nicholas Foran, Cond. oper.
John Fraser, MM. oper.
Richard F. Gallagher, Motorman.
J. L. Goodwin, MM. oper.
Fred A. Gower, Motorman.
Coleman Griffin, Starter.
Adolph Gustafson, Starter.
John J. Haley, Cond. oper.
Frank D. Hardy, Motorman.
Edward J. Hartford, Conductor.
John Herrick, Cr. tdr.
Michael J. Hickey, MM. oper.
Denis Holloran, Motorman.
John E. Hurley, MM. oper.
Ferdinand C. Hutchings, Cond. oper.
David F. Johnson, MM. oper.
Thomas J. Johnson, Cond. oper.
John J. Kelley, MM. oper.
Stewart Leary, Cond. oper.
Patrick J. Liddy, Conductor.
Walter Longbottom Cond. oper.
Almond H. Lovejoy, Motorman.
Patrick J. Lynch, MM. oper.
Cornelius J. Mahoney; Starter.
Michael Mahoney, Motorman.
Francis T. Maloney, Conductor.
George H. Mortimer, Motorman.
Patrick Murphy, Janitor.

Dennis J. McCarthy, Motorman.
James D. McDougall, Conductor.
Horace A. McFarland Starter.
Andrew McLaughlin, MM. oper.
Michael T. Nowell, MM. oper.
John J. O'Gara, Conductor.
Cornelius O'Neill, MM. oper.
Timothy Rafferty, Motorman.
Duncan W. Robertson, MM. oper.
Edward F. Roche, MM. oper.
William J. Roche, Conductor.
A. B. Rodenhiser, MM. oper.
William Scott, Motorman.
John T. Shea, Motorman.
Ernest A. Sherman Conductor.
James A. Thomas, Motorman.
Ralph E. Turney, Cond. oper.
A. H. Weatherbee, Starter.
Harry H. Wilson, Conductor.

Division 4

Stephen C. Adams, Conductor.
Henry S. Anderson, Operator.
Edwin Baker, Operator.
Ralph Bevins, Operator.
Frank A. Broman, Operator.
Timothy Carney, Operator.
James Carrigan, Operator.
John M. Clune, Operator.
Jeremiah Coffey, Operator.
Albert E. Craig, Operator.
James F. Cronin, Operator.
Thomas P. Davis, Cr. Tdr.
Timothy J. Delaney, Operator.
James Doherty, Operator.
Ernest A. Dolliff, Operator.
James E. Donahue, Sta. master.
Charles M. Drake, Motorman.
William H. Flynn, Operator.
David W. Foley, Operator.
Lester F. Gayton, Operator.
Frank H. Gordon, Operator.
Harry D. Hanson, Operator.
Truman W. Hefflon, Conductor.
John T. Hunt, Starter.
Edward E. Johnson, Starter.
Charles Larson, Operator.
Melville C. Lowe, Operator.
Patrick S. Lyons, Operator.
John J. MacKay, Starter.
Bernard Mallon, Operator.
Patrick J. Maraga, Operator.
Louis A. Martin, Operator.
Thomas F. Mulcahy, Operator.
Michael Mulvey, Operator.
John Murphy, Operator.
Joseph J. Murphy, Operator.
Gavin Murray, Operator.
Daniel McAuliffe, Operator.
Thomas McBeth, Operator.
Daniel F. McCarthy, Operator.
Michael J. McCarthy, Operator.
Donald N. McLeod, Operator.
Herman P. McManus, Operator.
Patrick F. McNerney, Operator.
Bartholomew J. Newman, Inspector.
William J. Noble, Operator.
John O'Hara, Operator.
George H. Othote, Operator.
George C. Rand, Operator.
James Rennie, Operator.
Wm. A. Robinson, Operator.
George J. Snyder, Sta. master.
Stephen M. Stafford, Operator.
William Sullivan, Operator.
Frank I. Tukey, Night clerk.
Dennis J. Tynan, Operator.
Edward W. Walker, Operator.

"EL" NEWS NOTES

(Concluded from page 55)

are persons who prefer to stand in a bus for a short distance rather than wait.

It is manifestly impossible for car riders to carry the expense of additional operators and buses to take care of the few passengers who are left over between scheduled trips during the brief rush-hour periods. It is for these few passengers that this right is asked. And, of course, it follows that there would be "standees" in buses only during the rush-hour periods and during times of emergency.

The modern type of bus permits the carrying of these additional passengers with safety and with no appreciable discomfort. May we point out to your correspondent and to others who read his letter that the trustees and the operating management of this Railway are more interested than anybody else in the safe transportation of the residents of Boston. We would be the last to recommend any change which would in any degree make for less safe transportation.

We are not asking for a right which has not become accepted. The State Department of Public Utilities, in its rules and regulations, has laid down the principle allowing standing passengers up to 25 per cent of the seating capacity. Moreover, this principle has been incorporated in ordinances of the cities of Somerville, Medford and Malden, and in the towns of Belmont, Brookline, Watertown and Arlington. We are now asking for the same privilege in the cities of Boston and Cambridge.

May we emphasize that the only change which would result from the granting of the petitions by the cities of Boston and Cambridge would be that during rush hour periods from six to ten passengers per bus, according to size, would be allowed to stand and would be accommodated to the extent of saving the time involved in waiting for another bus. It is not the intent of the Boston Elevated to reduce the bus service in any section through the granting of these petitions.

Mr. Brady Dies

NICHOLAS F. BRADY, son of Anthony N. Brady, in whose memory the memorial medals for safe and healthful operation of electric railway properties are annually awarded, died on March 27 at the age of 51 years. He was the motive spirit behind this award, and was actively interested in the progress of public utilities until shortly before his death. His death was caused by arthritis and heart failure.

EDUCATIONAL PROGRAM FOR APRIL

This summary will take the place of the chart heretofore printed in "Co-operation" as the educational program is now practically completed for the season.

Tuesday, April 1
Principles of Investment, closing meeting.

Thursday, April 3
Selling Car Rides, closing meeting.

Friday, April 4
1st-Year Foreman Conferences, closing meetings.

Wednesday, April 9
Accident Prevention, closing meeting.
Practical Supervisory Problems, closing meeting.

Wednesday, April 23
Effective Speech, closing meeting.
Boston Elevated Supervisors' Association, annual and closing meeting. Speaker, J. F. Joyce, assistant vice-president Boston & Maine Railroad. Election of officers.

Note. Thursday, May 1, has been provisionally selected as the date of the closing exercises, and Thursday, May 8, is the provisional date for the annual debate between the Edison Company and the Elevated.

EVERYDAY ECONOMICS*—VIII

Appreciating the value and charm of these articles on Economics, written by Dean J. E. LeRossignal, Ph.D., LL.D., of the University of Nebraska, the Railway purchased the right to reproduce them in "Co-operation" under the copyright. Due to space limitations the publication of this installment has been delayed. See issue for Oct., 1929, p. 153, for last section.

BANKING

A bank is an institution whose chief business is to buy and sell credit; that is, to receive deposits, to make loans, and, sometimes, to issue notes.

The earliest European bankers were goldsmiths in Venice, Genoa, Amsterdam, and elsewhere, who, because they had strong-boxes, used to be asked to receive money. jewels, and other valuables for safe-keeping.

After a time, finding that the depositors did not demand their money all at once, they began to make loans, thus putting the hoards into circulation and helping their fellow citizens to carry on business. This was the beginning of modern banking.

The activities of a modern commercial bank center about the receiving teller, the paying teller, and the cashier, or other officials who have charge of loans.

The receiving teller takes the money and checks which the customers deposit, because they wish to put their money into safe hands and to have a checking account on which they may draw at will.

In America, by far the greater proportion of money payments are made by check. In this way deposits circulate as money, for checks are a substitute for money.

In Europe, checks are not so commonly used, and relatively more money is required to carry on business.

Naturally, every bank receives checks on many other banks. In a large city, these are sent daily to a central office, called a clearing-house, where representatives of every bank meet to exchange checks and to pay balances. The balances are, in fact, a very small part of the total of the checks cleared or exchanged.

The paying teller gives cash to those who need it for till or pocket money; but, as a rule, he gives out far less than the receiving teller takes in.

Usually, the paying teller gives the customers what they want: gold, silver dollars, subsidiary coin, or paper money of various kinds in convenient denominations.

If there is considerable demand for cash, as in spring and fall, the paying teller of a bank may pay out Federal Reserve notes or, possibly, National Bank notes. This is the way in which bank-notes get into circulation.

The representatives of the loan department spend their time interviewing business men about the making and paying of loans.

If a merchant wants $10,000 to pay for certain goods, he explains the situation to his banker, and, presumably, receives the loan, say, at 90 days.

He gives the banker his note for $10,000, due in 90 days, and receives a deposit slip for that amount, less the bank discount, that is, the interest on the principal for 90 days at, say, 6 per cent.

He then deposits the credit with the receiving teller and has the right to draw on it at will. At the end of 90 days he pays his note, probably with money derived from the sale of the goods in question.

As a merchant's turnover is usually fairly rapid, mercantile "paper" usually runs for 30, 60, or 90 days. On the other hand, traders on the stock and produce exchanges, who can sell at any time, usually borrow on "call" or demand.

Farmers' paper often runs from 4 to 9 months, as crops are planted in the spring and sold in the fall; or, perhaps. "feeders" are bought in the fall and sold in the spring.

Commercial banks deal in short-time paper because their deposits are subject to check, or payable on demand. So they must have fluid or liquid assets, which can be quickly collected, in case of need.

Savings and investment banks deal in long-time paper, lending, perhaps, on mortgages running from 3 to 5 years. They can do this because their depositors do not expect payment on demand.

Banks perform other services, such as collection of bills and sending of funds from place to place; but deposit, lending, and note issue are their chief contributions to the work of the business world. They are so vital that modern business could not go on without them.

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THE FEDERAL RESERVE SYSTEM

As we have seen, commercial banks serve the business world chiefly by receiving deposits, making loans, and issuing notes.

And, as business expands and contracts from time to time, it is necessary that deposits, loans, and notes expand and contract also, in order that there may be neither monetary stringency nor inflation.

That means that bank credit should be more elastic than the monetary system itself can possibly be.

But, while providing elasticity of money and credit, the banks must also provide a secure foundation for bank credit.

Security of loans is obtained by lending only to people whose credit is good, and, when necessary, requiring indorsement of notes, mortgage liens, or deposit of collateral.

Security of deposits is obtained by having large capital and surplus; by mantaining reserves of money sufficient to meet all checks as they are presented for payment; by making good loans; and, in general, by careful management.

Security of national bank notes is obtained by deposit of government bonds, as required by law, by making the notes a first claim on assets; and by the double liability of the stockholders.

The National Banking Act, passed as a war measure in 1863 and 1864, provided for almost perfect security of notes, but practically no elasticity at all, as the note issues expanded slowly without contracting, and thus gave no relief in time of monetary stringency.

Also, the national banks, being required to keep definite reserves against their deposits, could not expand their loans when the reserves went down to the limit, as they were apt to do in spring and fall, and in time of crisis.

Bankers thus found it hard to provide elasticity and security at the same time; so the Federal Reserve System was created by Act of Congress in 1913, in order to help them to keep the golden mean between stringency and inflation.

There is one Federal Reserve Board at Washington, over the whole system, and 12 Federal Reserve banks in New York, Boston, Philadelphia, Richmond, Atlanta, Cleveland, Chicago, Minneapolis, St. Louis, Kansas City, Dallas, and San Francisco.

All the national banks and some of the state banks are members; and the member banks own the stock of the reserve banks; so it is a system of private banking under governmental control.

Under this system, security of loans is increased by the close co-operation of the member banks with the Federal Reserve bank and with one another. Also, as formerly, there is supervision by the national bank examiners.

Security of deposit is promoted by requiring the member banks to keep their reserves with the Federal Reserve bank of their district, which, in turn, must normally keep a reserve in money equal to 35 per cent of its deposits.

Security of the Federal Reserve notes, which, in time, will displace the old national bank-notes, is maintained by a gold reserve of at least 40 per cent, and 60 per cent in gold or collateral,

Elasticity of loans is obtained by requiring only moderate reserves against deposits, and by permitting member banks to rediscount customers' notes with the Federal Reserve bank, thus creating strong central reserves which may be the basis of loans to other customers.

The same provisions permit of elasticity of deposits and circulation of checks, corresponding to the expansion and contraction of business.

In the same way, too, the Federal Reserve notes get into circulation; for, when the member banks rediscount their customers' notes, they may receive Federal Reserve notes, which they pay out, as cash is required.

However, the Federal Reserve notes do not seem to come back to the reserve bank as readily as was expected; so, as the note issue expands more than it contracts, it is not perfectly elastic.

Doubtless, this concentration and mobilization of bank reserves and the elastic note issues have helped to prevent the periods of monetary stringency which used to occur in fall and spring, when business was unusually active.

Also, the same methods probably prevented a monetary stringency in 1914, and a serious panic in 1920, by supplying loans to many solvent banks and other concerns, which were in danger of bankruptcy.

REGISTER ANY TIME

for

The A B C of the Motor Bus

The A B C of the Motor Car

Just notify the general manager's office of your desire to begin.

LESSONS FROM THE INK BUSINESS

The speaker at the fifth Forum meeting, held on Thursday, March 6, with Mr. Dana as chairman, was Walter J. Rhodes, works manager Carter's Ink Company. Mr. Rhodes' address was both instructive and entertaining. It demonstrated how an alert and forward-looking organization can successfully meet competition and changing conditions. In fact, he showed that unless a manufacturer in a business like his is ever watchful, he will be outstripped in the race for sales.

Before taking up details of the Carter business, Mr. Rhodes first outlined the problem of the individual. This, he said, is to understand himself and to correlate his knowledge. He is interested first in the maintenance of life, and then in the propagation of life.

These interests involve knowledge of the emotions, influencing the individual for good or evil. He also must appreciate his intellectual equipment and his esthetic sense, that is his love of the true, the beautiful and the good.

DEPARTMENTALIZING

As the individual begins to associate others with himself he begins also to departmentalize his activities. The result is teamwork. Each part in the organization does its specific part. Just as an all-star baseball club without teamwork would fail, so is it true in any activity, domestic or industrial. Less distinguished baseball players, playing as a real team, would be more successful than the all-star aggregation.

Mr. Rhodes used organization charts to show how departmentalizing works out in simple and in more complex businesses. A large business will have its work grouped under: (1) selling; (2) manufacturing; (3) finances; (4) technical and research. The general problems of the big business are essentially the same as those of the individual.

FORTY YEARS WITH CARTER'S

Mr. Rhodes then reviewed some of his experiences of the past forty years in the ink business. He cited a number of problems which had to be met in improving the products and meeting competition. Starting with ink and mucilage the business has had a logical expansion. The invasion of the fountain pen into the writing field tended to cut down ink consumption in preventing evaporation. It also required special types of ink. Then the pen makers began to make ink, forcing the ink manufacturers to go into the pen business. In that business there has been active competition, as colored rubber and celluloid became popular fountain pen materials.

In the adhesive field, mucilage was forced into competition with paste, and this involved great manufacturing difficulties. Carbon paper also is a Carter product which has brought interesting problems.

From the above brief summary it will be seen that Mr. Rhodes used Carter's experience to illustrate his fundamentals. He has made a lifetime study of the problems of management and has had a vital part in the program of the business which he described.

THE CALL OF BASEBALL!

By James Edward Hungerford

There's a happy kind of feeling
Comes into our hearts a-stealing
At this "peppy" time of year!
Kind of starts the blood a-stirring;
Sort of sets the pulses purring—
Makes us feel like we could cheer!
And of course you know the reason—
It is April, and the season
When ol' baseball time is here!

All our hearts have been a-pining
For the "diamond," brightly shining,
And the bases spick-an'-span!
For the sight of players drilling
Out—to make a season's "killing,"
For the glory of the clan!
Be we eighty years, or younger,
In our hearts we know the hunger
Of the baseball-loving man!

There is something mighty thrilling,
Soul-inspiring and heart-filling,
When the "ball-fans" congregate!
And the past, with annals tragic,
Seems to fade away like magic,
As we pass the ball-park gate!
As we hear that ringing call
Of the umpire-gent; "play ball!"—
And the "pill" speeds o'er the plate—
Golly, fellers, "ain't it great?"

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SECOND ATHLETIC NIGHT

The Boston Elevated Supervisors' Association on March 19 held a highly successful "Athletic Night," following the general lines of last year's program, but with many improvements. A small but standard ring was provided for the athletic events.

These events were preceded by short, instructive and amusing talks by Henry Clark, assistant athletic director Harvard University, and "Eddie" Casey, also a famed Harvard football player.

The athletic events comprised the following:

Three rounds of boxing between Harry Roberts, North End, and Jimmie Driscoe, Revere.

Three rounds of boxing between "Joey" Lawrence, East Boston, and "Lefty" Williams, Lynn.

A feature bout of boxing consisting of three rounds between "Jimmie" Sacco, East Boston, and "Tommy" Clayton, West End.

There was also a wrestling match between O. T. Marchioni, lightweight champion of New England, and "Charlie" Hingston, Tufts College champion of 1928.

There were also vocal selections and recitations by Charles Bissett and William (Hookey) Murphy.

As an item of business in connection with this meeting, and as required by the by-laws, Chairman Kivell called for nominations from the floor for a nominating committee to present one of two slates at the annual meeting. The following were appointed:

W. H. Burrell, Power.
S. P. Bowen, Transportation.
James H. Duffey, Rolling-Stock and Shops.
Leo J. Collins, Maintenance.

The Board of Control had previously appointed as its nominating committee the following:

J. A. Griffin, Transportation.
M. G. Power, Maintenance.
John J. Manning, Power.
A. A. Ordway, Rolling-Stock and Shops.

"EL" BOWLING TEAM WINS

As announced in the February issue of "Co-operation" a special bowling match was held during February and March, the competing teams representing respectively the Boston and Maine Railroad, the New Haven Railroad, the American Railway Express, and the Boston Elevated Railway. The "El" team far outstripped its competitors as shown by the following scores:

	Won	Lost	Pinfall
Boston Elevated	9	3	4585
Boston & Maine	7	5	4375
American Ry. Express	5	7	4386
New Haven	3	9	4285
High team, single, Boston Elevated			571
High team, three, Boston Elevated			1648
High single string:			
McCarthy, Boston Elevated			133
Wilson, Boston Elevated			133
Kelleher, American Express			133
High three strings, Doherty, Boston E.			348

Below is the line-up of the Boston Elevated (picked) team, together with the scores for the final night of the match.

	1	2	3	Total
Wilson (Div. 1)	89	133	96	318
Rose (R. S. & S.)	105	102	118	325
Doherty (R. T. L.)	131	107	110	348
McCarthy (R. T. L.)	105	133	97	335
Ritchie (R. S. & S.)	111	96	115	322
	541	571	536	1648

THE INDUSTRIAL BACK

(Concluded from page 56)

this position, muscles can contract with their maximum rapidity but their minimum of power. In this position the leverage is poorest. Placed thus, at their greatest disadvantage, they are asked to do optimum work, for they must not only raise the load but overcome its inertia.

Furthermore, lifting is often done in tandems of two or more men, when the accidental or careless "let go" of one of them instantly releases upon the unprepared muscles of the others an additional 100 pounds or so.

Back muscles used under the above mentioned conditions must inevitably be strained, and the wonder is not that we have so many strained backs but that we have not far more. To test the validity of these observations the reader is invited to watch a group of laborers at work, when he will see the tremendous disadvantage under which the back muscles operate.

The accompanying illustrations will better serve to describe the technique of correct lifting. It will be seen that the legs "do the work"; also that the chest in lifting is carried high in front. The legs are capable of becoming about three times as powerful as the back; they are constructed by nature for the work of support and lifting. The spinal muscles, under circumstances of lifting in this manner, act well within their limits of capability. The stress is really diffused throughout the entire body musculature. Correct lifting will prevent strain in the vast majority of cases in spite of postural faults or loss of ligament elasticity.

TREATMENT

In regard to the treatment of back strain, rest, without restricting the freedom of motion in the spine for a limited period of time, is the outstanding principle, provided muscles be gently stretched and "limbered" by exercises directly after the period of rest. But rest with the use of back brace may defeat all other measures. Also, rest prolonged beyond the time of repair will make the convalescence far longer and more difficult. Timidity on the part of the surgeon and patient in withholding activities because of the pain of stiffness and disuse only confuses the issue, shakes the faith of the patient, and courts failure. It must be borne in mind that nature repairs muscle strain very rapidly usually within a few days to two weeks; in the case of muscle sprain, in four to six weeks.

CHANGES IN THE RESERVE FUND

Fiscal Year 1928-29
July 1, 1928, $1,000,000

July	$331,329.58*	Jan.	$74,244.54†
Aug.	398,356.82*	Feb.	53,235.38*
Sept.	204,840.30*	Mar.	245,409.29†
Oct.	3,135.31†	Apr.	140,661.08†
Nov.	2,583.64†	May	148,719.82†
Dec.	225,043.06†	June	32,187.99*

Profit and loss credit........$180,153.33

Fiscal Year 1929-30
July 1, 1929, $1,000,000

July	$285,903.19*	Jan.	$195,210.33†
Aug.	361,650.56*	Feb.	18,035.80†
Sept.	197,825.11*		
Oct.	64,866.77†		
Nov.	64,148.53†		
Dec.	286,824.84†		

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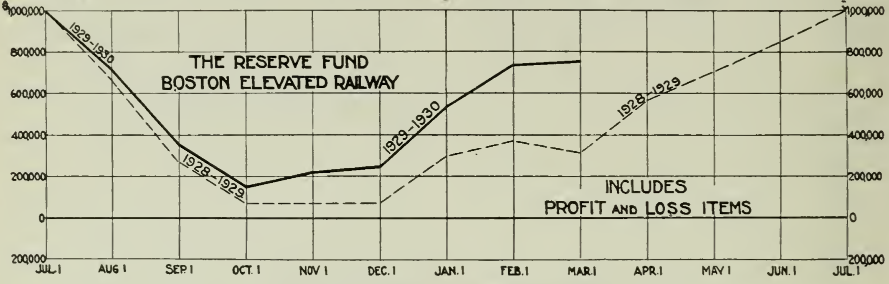
†Excess of revenue over cost of service.

*Excess of cost of service over revenue.



FEBRUARY OPERATION

	1930	1929
GENERAL FINANCIAL DATA		
Revenue exceeded cost of service..............................	$18,035.80	
Cost of service exceeded revnue..............................		$53,235.38
Operating revenue per car-hour (A.E.R.A. std.)..	$6.19	$6.15
Operating revenue per car-mile operated................	61.03c	60.94c
Average fare per revenue passenger........................	9.262c	9.269c
Ratio operating expense to operating revenue......	69.58%	71.91%
PASSENGERS CARRIED		
Revenue passengers	28,788,374	29,181,570
Per cent 5c and 6¼c passengers...............................	18.87%	18.82%
Revenue passengers per car-mile operated............	6.355	6.347
OPERATING FACTS		
Trips operated	594,954	596,161
Car-miles operated:		
Rapid-transit lines	1,360,178	1,374,605
Surface, two-man	1,040,620	1,292,680
Surface, one-man	1,560,645	1,391,501
Advertising cars..	261	
Motor bus	568,504	538,526
Total miles operated	4,530,208	4,597,312
ACCIDENT DATA		
Accidents per 10,000 car-miles	1.51*	1.917*
Accidents per 10,000 bus-miles	1.532*	2.635*
Revenue passengers carried per accident	21,500	17,970
Average number of witnesses per accident	3.06	3.33
COMPLAINTS AND DEFECTS		
Complaints in regard to car service	27	42
Employees complained of by car riders	89	90
Car defects reported per 10,000 car-miles	3.7	5.2
INFORMATION ABOUT POWER		
D.c. kw.hr. output gross for month.........................	24,238,020	25,244,450
Maximum kw. load	98,280	92,500
Tons of coal consumed for power............................	19,178	19,929
Lbs. of coal for power per d.c.kw-hr. at cars........	1.775	1.772
Operating and maintenance cost of power, including depreciation:		
Per d.c.kw.-hr. for car service...............................	0.809c	0.788c
Per revenue car-mile	4.61c	4.54c
Kw.-hr. per revenue car-mile	5.697	5.765

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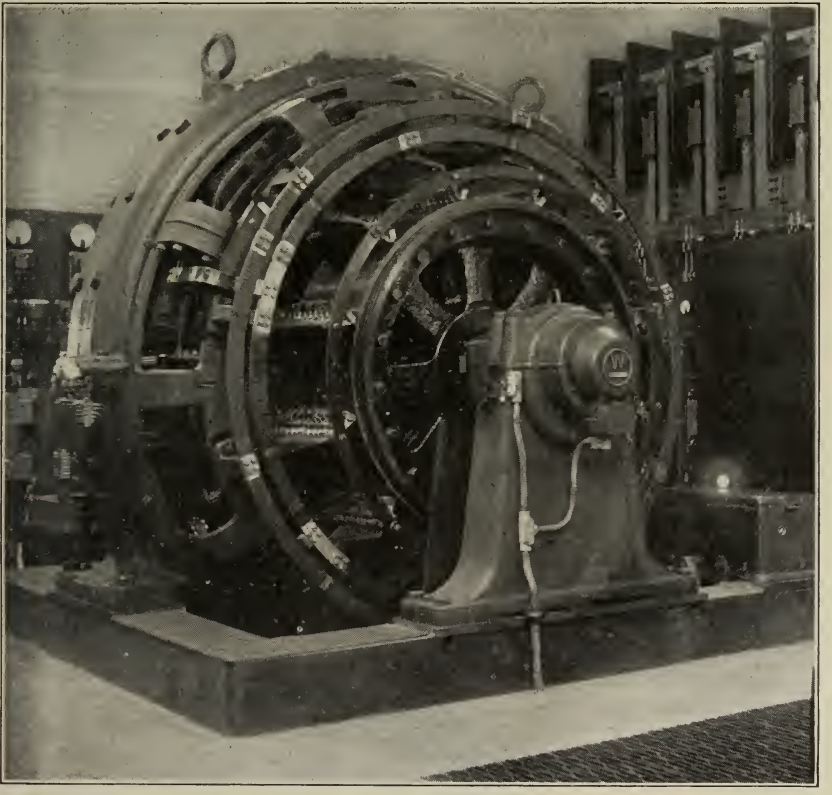
*Does not include miscellaneous accidents or derailments.

March 20, 1930. EDWARD DANA, *General Manager.*

BOSTON ELEVATED RAILWAY
CO-OPERATION

Volume 9 APRIL, 1930 Number 4

"El" Machines Behind the Scenes



A 3,000-KILOWATT ROTARY CONVERTER

(See Page 78)

To All "El" Employees

LAST month on this editorial page I called your attention to the opportunities which will come to us this year, directly and indirectly, on account of the tercentenary celebration. The year will be marked by its many conventions, including the great gathering of the American Legion in the fall.

* * *

The visitors will ask innumerable and, at times, difficult questions. In preparation for this, should we not all review and amplify our knowledge of the "El" System; the routes of its car and bus lines, its transfer points and other details? Patrons will ask more questions than usual about the local points of historic interest, of which this community has more, probably, than any other region in the United States. Let us "brush up" on these, too.

* * *

In the downtown business section a car rider recently asked a conductor how to get to Readville. The inquirer was told, courteously enough, that he had better take the steam railroad. Not satisfied he addressed the same inquiry to another "El" operator, who gave him specific directions as to the route by way of the main line elevated to Forest Hills, by surface car to Cleary Square and thence by bus to Readville. No comment upon this incident is necessary.

* * *

The riding public looks to every "El" employee as a reliable source of information. Let's not disappoint them when we can help it.

Edward Dana

BOSTON ELEVATED RAILWAY
CO-OPERATION

VOL 9. APRIL, 1930 NO. 4

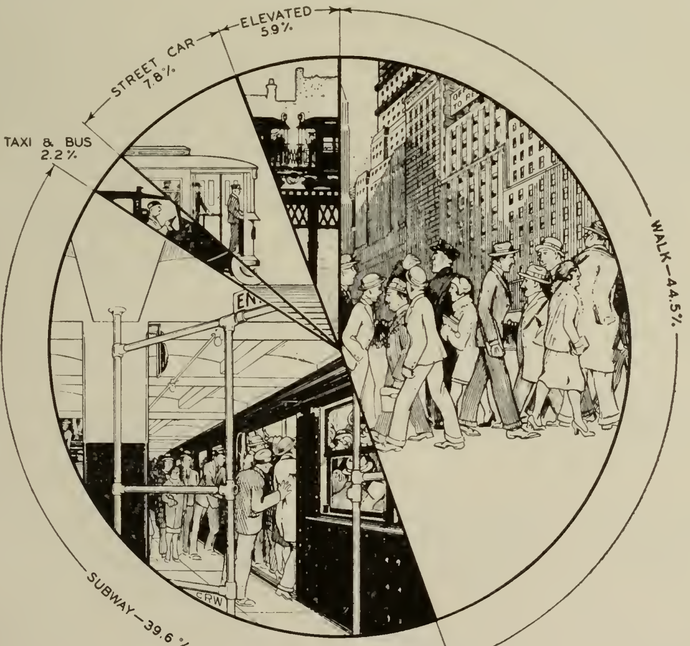
WHY CIRCULAR OR "PIE" DIAGRAMS ARE POPULAR

Along With Other Progressive Organizations the Boston Elevated Railway Makes Considerable Use of This Instructive Type of Diagram in Presenting Data

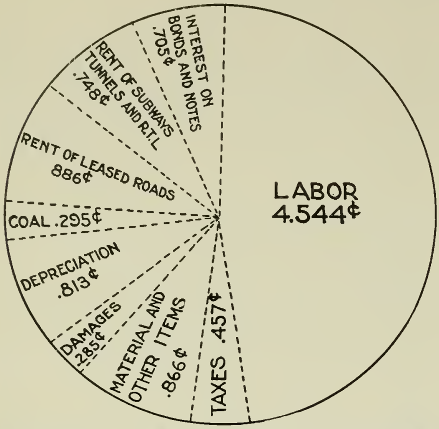
IN the annual report of the public trustees for 1929, copies of which are in the hands of all employees, page 24 is occupied with a diagram showing the allocation of cost of service per passenger for the year covered by the report. This diagram is of the circular or "pie" variety, a form of diagram which is found useful for many purposes in the electric railway business as in other lines of business. The trustees' diagram was reproduced on page 27 of the issue of "Co-operation" for February. For convenience of reference the diagram is shown again on the following page.

This form of diagram is useful in showing plainly how any particular whole is made up, in this case the cost of carrying one passenger. The complete circle represents 100 per cent, and the 360 degrees which make up a circle are divided up proportionately to the quantities to be represented.

In the cost-of-service diagram it will be noted that labor represents nearly one-half of the total cost of service. Operating expenses other than labor, in-



An Interesting Example of the "Pie" Diagram or Chart



Allocation of Cost of Service per Passenger for 1929

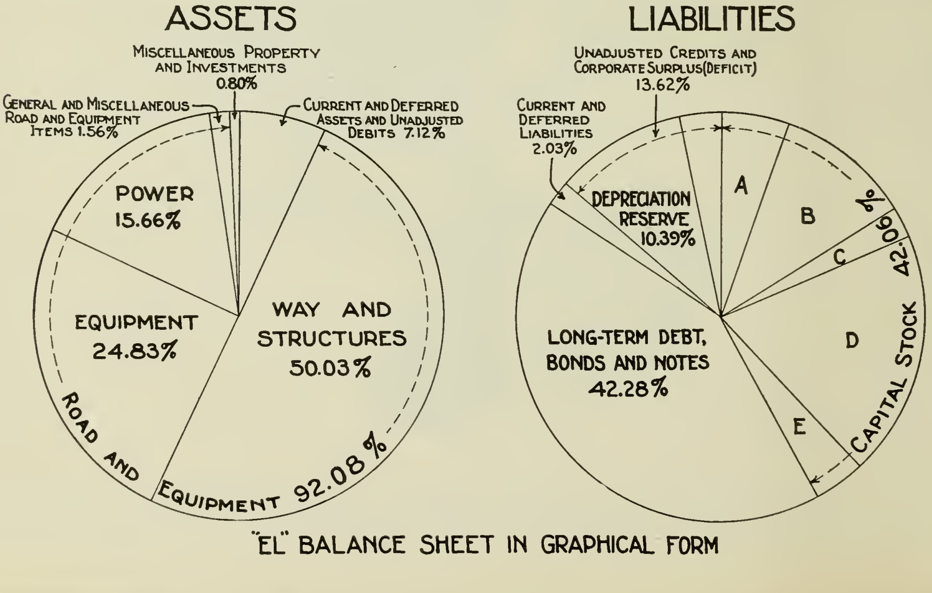
cluding coal, depreciation, damages, and material and other items, total about one-quarter of the whole. This leaves for the other items, sometimes called "overhead," slightly more than one-quarter. In "overhead" in this case are included interest on bonds and notes, rental of subways, tunnels and rapid-transit facilities not owned by the Railway, rental of leased roads and taxes.

A very interesting form of "pie" diagram is the semi-pictorial type, illustrated by the chart shown on the preceding page. This chart appears in a progress report on suburban transit for the Metropolitan District of New York, prepared by the Suburban Transit Engineering Board of New York. It shows the extent to which the several facilities are used by suburban passengers in New York, after leaving terminals, to reach their destinations. This is the combined result for the three sectors from which the suburbanites reach town, New Jersey to the west and south, Westchester to the north and east and Long Island to the east. More than two-thirds of the arrivals from Long Island used the subway, while fewer than one-quarter walked. On the other hand more than one-half of those from the New Jersey sector walked, while slightly more than one-quarter used the subway. This results, of course, because the latter people arrive at downtown points which are close to the business district.

At the bottom of this page is a third illustration of the "pie" diagram, showing the Boston Elevated balance sheet in graphical form. A similar graphical balance sheet was given for the preceding year in the issue of "Co-operation" for February, 1929, page 29.

Looking first at the asset side it will be noted that practically one-half of the capital of the railway is in way and structures. Equipment covers approximately one-quarter, while of the remainder one-sixth of the grand total is invested in power facilities. Road and equipment account for 92.08 per cent of the total, the remainder consisting of working capital and sundry assets.

On the side of liabilities, the long-term debt of 42.28 per cent, and capital stock (with premiums) of 42.06 per cent, make up the larger part of the total. Depreciation reserve and miscellaneous items comprise the remainder.



"EL" BALANCE SHEET IN GRAPHICAL FORM

The above illustrations will serve to prove conclusively how valuable and interesting the "pie" diagram may be in studying the "break-down" of any quantity into its parts. An application of this idea of safety data will be found on page 154 of the presentation of the Railway to the Anthony N. Brady memorial medals committee. This is now being reprinted with the title, "Safety on the 'El'" and copies of the presentation will be distributed to all employees soon after this issue of "Co-operation" is off the press.

EVERYDAY ECONOMICS*—IX

In this installment of the articles by Dean J. E. LeRossignol, Ph.D., LL.D., of the University of Nebraska, the author tells how business is financed and takes up two of the factors of production in industry, labor and land. Next he will discuss the "enterpriser" as a factor of production and show how the product is divided among the factors of production.

THE FINANCING OF BUSINESS

The word "finance" has a mysterious sound; but there is nothing very mysterious about it, as it is merely the getting or raising of money or credit with which to carry on business.

One who wishes to start a new business or expand an old one must either use his own money or get money from some one else.

If he decides to use his own money, he takes what cash he has on hand, or sells some property, and uses the funds to meet the expenses of the business in question.

But if he needs more money than he has or cares to risk, he must get funds from some other source, and that is where the difficulties of business finance begin.

Possibly, he may take an active or silent partner, and carry on the business with their combined funds.

Possibly, he may be able to get all the credit he wants from manufacturers, merchants and bankers. In this case, his financial problems center about the obtaining of short-time credit and the meeting of his obligations as they fall due.

When, however, large amounts are needed for a considerable time, a farmer will mortgage his farm, and a merchant or manufacturer his plant and equipment.

Evidently, the individual enterpriser and the partnership are at a disadvantage in the raising of large funds. This is one of the chief reasons why large businesses are usually organized as corporations and issue stocks and bonds.

When a business is thus incorporated, stocks may be sold to a few people by private subscription, or offered directly to the general public; or, as is more common, they may be sold through agencies which, after due investigation, recommend them to their customers.

Investors are willing to buy stock in several companies because of the fact that, in case of failure, their liability for the debts of the company is limited to the amount subscribed; or, in the case of most banks, to double that amount.

This is the celebrated principle of limited liability, which has greatly encouraged the creation of business corporations.

Sometimes, two kinds of stock are issued: common and preferred.

Preferred stock is stock on which dividends are paid at a stated rate—say, 7% —before anything is paid on the common stock.

Often, a corporation will issue mortgage bonds, on the security of part or all of its property. Industrial bonds bear interest at a comparatively low rate: 6%, 5%, or even less. But the interest must be paid, as in the case of a farm mortgage, on pain of foreclosure.

Thus, there may be three classes of investors, according to the responsibility, risk, and returns which they take.

The bondholders take little or no responsibility, the least risk, and the lowest returns.

The owners of the preferred stock, who may or may not have voting power, take more responsibility and risk than the bondholders, and larger, though fixed, returns.

The common stockholders take full responsibility, most of the risk, and all of the profits, if any are left after paying all obligations, including interest on the bonds and dividends on the preferred stock.

The financing of business corporations is greatly aided by the stock exchange, where securities are listed and may be readily bought and sold.

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THE FACTORS OF PRODUCTION

In all business we find a twofold organization of persons and things: for man cannot work without material, and material cannot fashion itself into finished products without the guiding hand and brain of man.

On the material side we have another twofold division: first, land, as a gift of nature, with all its undeveloped resources; second, created capital, the joint product of man and nature.

It is easy to distinguish between land and other capital, when it is raw bush or prairie land untouched by man.

But after the land has been cleared, ploughed, fenced, drained, irrigated, or otherwise improved, it is hard to distinguish between the gift of nature and the work of man, for they are incorporated, the one with the other.

Sometimes, as in the case of land drained or irrigated at great cost, practically the whole value is a created value, and the site value is very small.

However, in all improved land, the two elements or factors are present: the site, which is fixed in location and limited in quantity, and the improvements, which can be increased or diminished, even though, at a given time, they may be inseparable from the land.

This distinction is particularly important in the case of improved city property, as buildings usually depreciate in value, whereas site values usually appreciate or increase in value.

On the personal side of business, we have another twofold division: first, a number of people carrying on business for themselves, whom we may call proprietors or enterprisers; second, a larger class of people working for others, whom we call employees.

Here, too, it is hard to distinguish between the work of enterprisers and that of employees, as farmers, shopkeepers, and other small proprietors do much of their own work. On the other hand, in large corporations, much of the management is in the hands of salaried employees.

The small proprietor is the typical enterpriser, for final decision rests with him; whereas the manager of a great corporation acts by delegated authority, for there is a power behind the throne—the directors and the controlling stockholders.

But whether the work of the enterpriser is divided or concentrated, he is the central figure in the business world and is well named "captain of industry."

It is he who makes plans and carries them out, brings land, labor, and capital together in the right proportions at the right time and place, organizes them, sets them at work, and keeps them going so as to produce the desired results.

So there are four great factors of production—land, capital, labor and the enterpriser—and the enterpriser is chief, because he is the organizing and directing brain of the business world.

THE FACTORS OF PRODUCTION—LABOR

Labor is work of any kind, whether with hand or brain. So all workers, whether lumberjacks, miners, farmers, merchants, or teachers, are laborers in the broadest sense of the word.

According to the *United States Census*, there were, in the year 1920, about 6,000,000 farmers and stock raisers, and 4,000,000 farm laborers. But, as everybody knows, farmers are "laborers" also, for they do most of their own work.

In trade, there were about 1,400,000 wholesale and retail dealers, and 2,700,000 clerks and salespeople. Here, also, the proprietors do much ordinary labor, in addition to their work as enterprisers.

And yet, the majority of workers are employees, especially in mining, manufacturing, and transportation.

There are two main classes of workers: hard-handed and soft-handed. Sometimes, the former are called manual laborers and the latter brain workers.

But this distinction is not very satisfactory, as all manual laborers use their brains more or less, if only to hold a pen or push a button. And some soft-handed workers are soft-headed as well.

However, the fact remains that some work is mainly physical, such as digging a ditch, while other work is chiefly mental, such as writing books.

Each of the two main classes may be roughly divided into three groups: skilled, semiskilled, and unskilled.

Workers vary greatly in skill and efficiency because of differences in heredity—physical, mental, and social—and because of differences in environment, especially in regard to education.

Over heredity we have at present slight control, but the home, the school, the church, and other educational agencies do much to make labor efficient, and could do more, if they would set themselves to the task.

Employers, too, through improved machinery, suitable division and organization of labor, "scientific management," right methods of payment and promotion, and fair treatment of employees in every way, can create, on the material side, mechanical efficiency, and, on the personal side, a good morale, both of which make for increasing output, decreasing costs, and benefit to all concerned.

Labor organizations, also, can promote efficiency by setting up high standards of workmanship, and by cooperating with the employers toward the common end of obtaining a maximum of product at a minimum of cost.

THE FACTORS OF PRODUCTION—LAND

When economists speak of land they mean all the gifts of nature—land, water, and air. And now that we have communication by radio, they will have to include the ether waves, also, under the head of "land."

There are many different kinds of land, according to their use for hunting and fishing, grazing, agriculture, lumbering, mining, commerce, manufacture, residence, and even sites for wharves and dams, wind- and water-power.

So important is land as the basis of our economic life, that it largely determines the distribution of population and the way in which people live.

Hunters and trappers live in the north, in the mountains and other thinly settled regions; fishermen, along the sea-coast and the great lakes; cattlemen, on the frontier; farmers, where there is good land; manufacturers, where coal and raw materials are available; merchants, where the streams of trade converge.

All business people, then, use or exploit land in one way or another, if only as standing ground for their operations. In so doing, they bring labor and capital to the land in suitable quantity and kind, and their success in business depends largely on their skill in combining these three factors of production.

For example, a farmer might spend, say, $5 worth of labor and capital on an acre of ground, and harvest, say, $10 worth of wheat or potatoes; he might spend $10 and get a crop worth $25; or, by adding another $5 of cost, making $15 in all, he might get a crop worth $40.

If there were no limit to this, a farmer could raise $1,000 or $1,000,000 worth of crops on a single acre, and every country, however small, could feed the world.

Which is, of course, impossible; for, very soon, the farmer comes to a point where an additional expenditure of $5 per acre yields less than the maximum return of $15, and this is the point of diminishing returns measured in terms of money.

In fact, if he continues to cultivate a single acre more and more carefully, he will find, before long, that an additional expense of $5 will yield a crop worth less than $5, and, possibly, less than $1.

This principle is so important that it is called the "law" of diminishing returns.

It compels farmers, as population increases, to cultivate poorer and poorer lands in their own country, until they reach the "margin of cultivation," where the land is so poor or so far from the market that they can make nothing but "wages," or, perhaps, a bare living, as is the case in many parts of Europe at the present day.

At this stage, or before it is reached, people migrate to America or other new countries, taking up first the more fertile or better situated lands, and, later, those less desirable, until, once more, they reach the 'margin of cultivation."

But, fortunately, population is not increasing so rapidly as formerly, and the advance of agricultural science is making it possible to raise larger crops at lower cost on the lands already in use, so that the misery of gleaning on the bare living margin of cultivation may be indefinitely postponed.

ELECTRIC RAILWAY SERVICE HELPS SELL REAL ESTATE

Connecticut realtors at a recent convention agreed that proximity to electric railway lines is the most important factor in the development of both residential and industrial real estate.

The best indication of this fact, they pointed out, is that practically all newspaper advertising of new developments contains the phrase, "Close to the street car lines," "Two minutes' walk from the trolley," or the like. Even in the classified advertisements for the sale or rental of individual buildings in thickly populated areas similar lines appear constantly. Public transportation service is regarded as more necessary to the sale of house sites than paved streets.

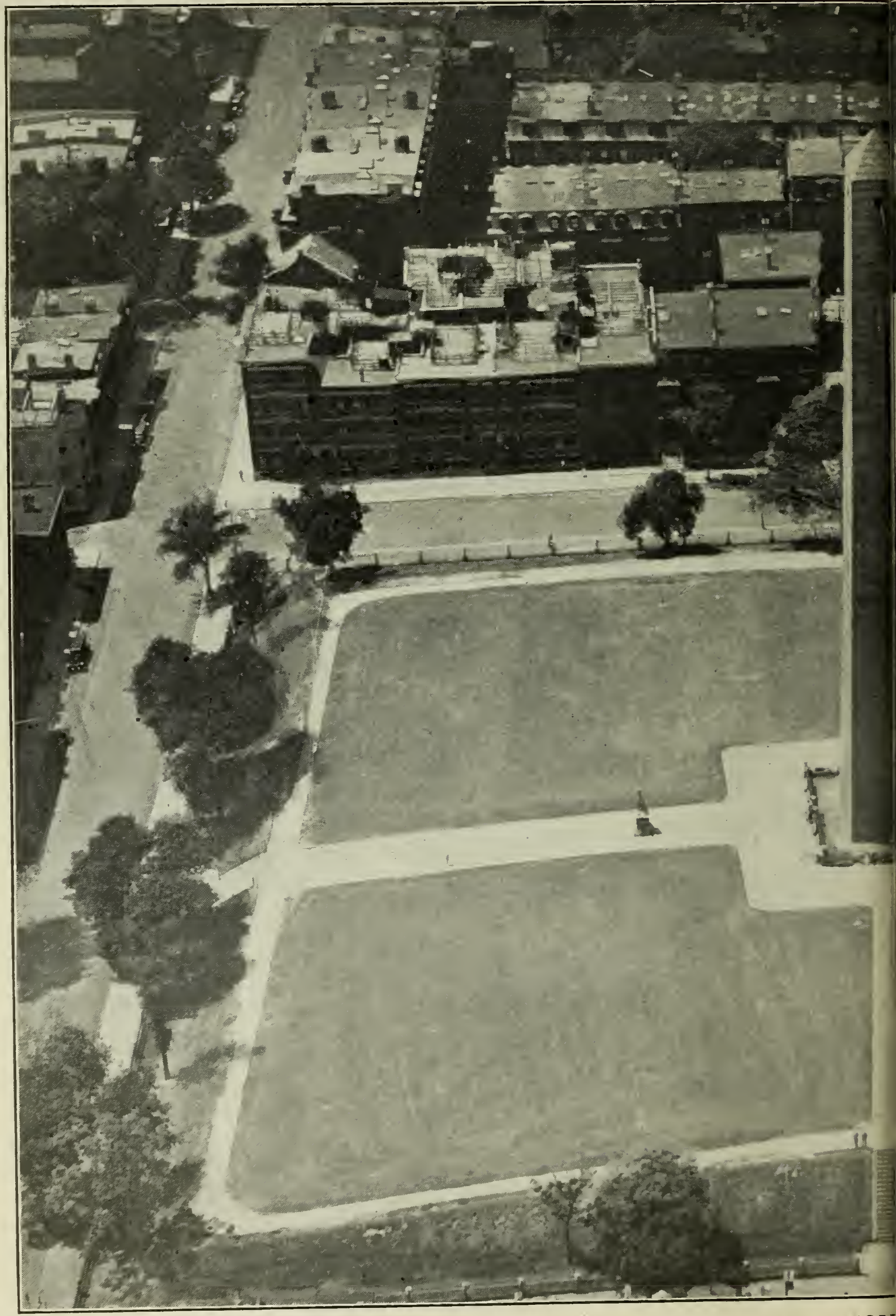
REGISTER ANY TIME

for

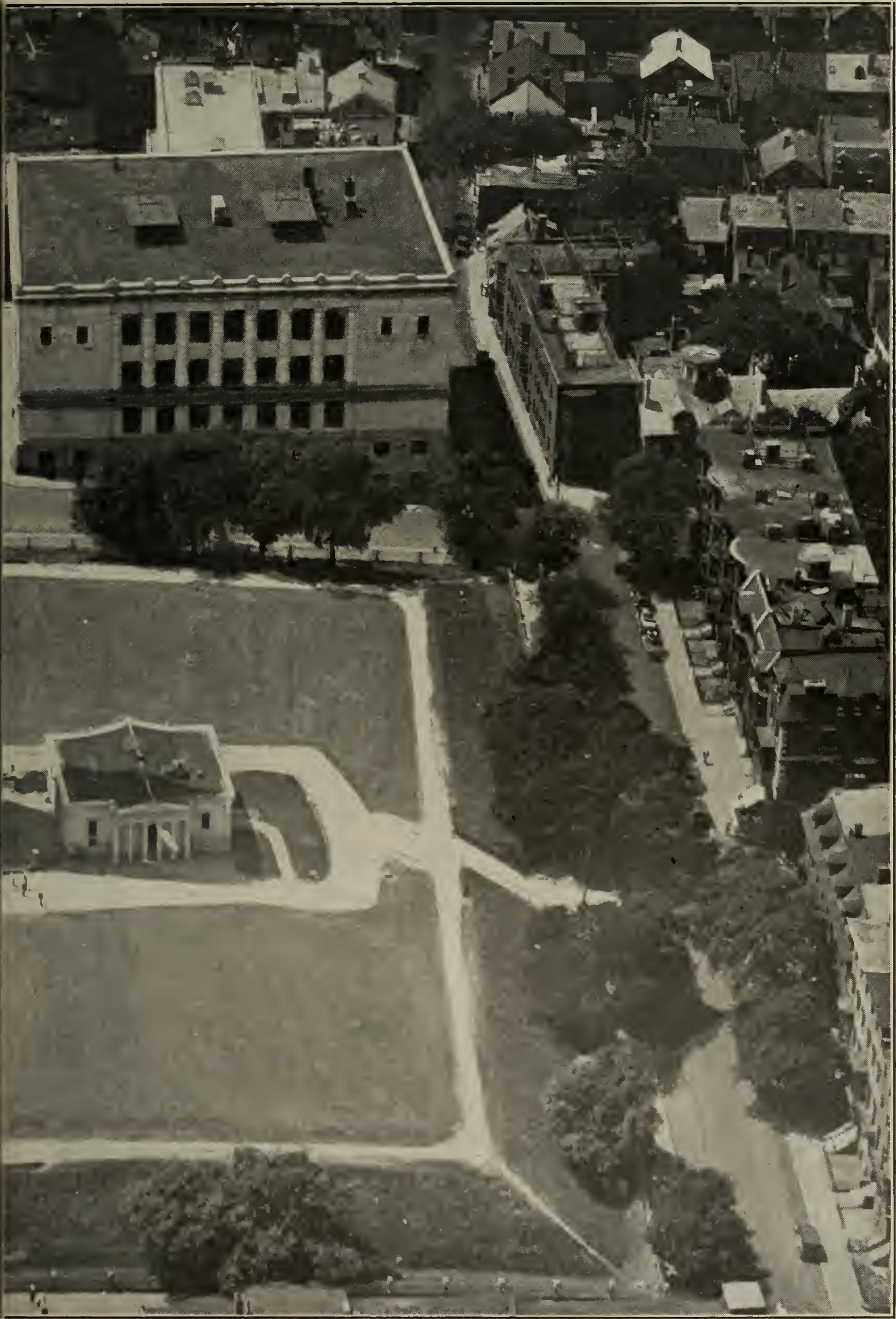
The A B C of the Motor Bus

The A B C of the Motor Car

Just notify the general manager's office of your desire to begin.



BUNKER HILL MON



NT FROM THE AIR

HOW OUGHT WE TO STAND?

By a Member of the Staff of the Massachusetts General Hospital
Orthopedic Department

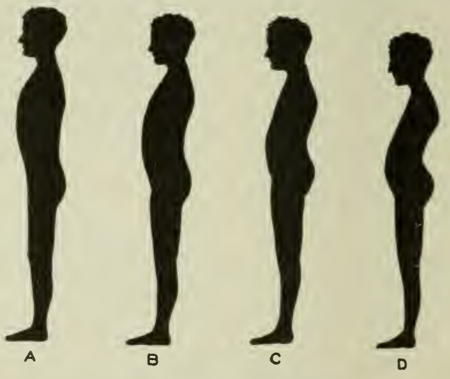
IN the issue, "Co-operation" for March, it was shown how the common manner of lifting causes back strain. When we view the problem of cause in industrial back strain from another angle, namely, that of the orthopedic surgeon, we find further light thrown upon the subject. A vast array of evidence accumulates in his practice which clearly indicates a predisposition to strain of certain types of back over others. Thus some individuals of a given age, muscle development and experience, at a given type of work, will be disabled with back strain far more often and for longer periods of disability than others of the same age, muscle development, the same experience and doing the same type of work. This granted, of course, that both types do not know how to lift correctly and are of the same mentality.

It is well established that "posture" or the habitual attitude in which the back is held, and bone changes or "spurs" in the ligaments at their attachments to the margins of the spinal joints, are predisposing factors in industrial back strain.

An individual's posture is good according to the closeness of approach of his spinal curves to the plumb line, provided he carries his back this way habitually. An individual's posture is poor according to the habitual exaggeration of these front-to-back curves. A deep hollow in the small of the back, a rounding of the back in the shoulder-blade region, forward position of head and neck and pendulous abdomen, represent the postural faults commonly seen.

These postural faults throw a decided burden upon the erector spinae muscles, since only through the sustained action of these muscles can the body be maintained in the erect position. The vertebral column is deprived, in part, of its role of support or foundation upon which the superincumbent weight rests. Rather it acts under conditions of faulty posture like the mast of a sailing vessel upon which the sails are hung, but where an elaborate system of guy ropes is necessary to keep the mast from sagging or breaking. In the back, these guy ropes are supplied by the constant tautness of these muscles. Muscles developed by nature to act as motive power must thus exhaust their reserves in simply carrying the body erect. It is through this circumstance, namely, a diminished factor of safety or muscle power reserve, that these back muscles are predisposed through postural fault to strain. Time, as much as circumstance, will serve to overburden them. An extra heavy lift, working overtime, or too long an automobile ride will temporarily deplete the reserve, and then some trifling effort will produce the "strain."

The bony changes or spurs (sometimes loosely described by the vague but awe-inspiring term "arthritis") which occur in the ligaments at their attachments along the margins of the joints limit the range of motion in the spinal joints by limiting the elasticity of their ligaments. A spine of limited flexibility throwns an added burden upon the erector spinae muscles and hence serves to predispose these muscles to strain. These bony changes in spinal ligaments are the result of long standing wear and tear. They occur among all men who perform much manual labor and usually begin between the thirtieth and fortieth years of age and gradually increase with the years. They are, of course stimulated by faulty posture through the circumstance that it increases wear and tear. They cause no symptoms whatever in



POSTURE STANDARDS

A, excellent posture: Head is up, with chin in, and well balanced above shoulders, hips and ankles: chest is up, with breast bone farthest forward of all parts of the body; lower abdomen is in and flat.

B, good posture: Head is slightly forward; chest is slightly lowered; lower abdomen is in but not flat; back curves are slightly increased.

C, poor posture: Head is forward; chest is flat; abdomen is relaxed and is the part of the body farthest forward; back curves are exaggerated.

D, bad posture: Head is markedly forward; chest is depressed or sunken; abdomen is completely relaxed and protuberant; back curves are extremely exaggerated.

themselves but act to predispose the erector spinae muscles to strain.

To sum up the discussion of the principal causes underlying industrial back strain it may be stated that strain is primarily caused by the mechanically unsound manner of lifting commonly employed and that the predisposing factors in industrial back strain are faulty posture and loss of ligament elasticity.

Proper posture is best learned through supervised exercises which teach easy control of the various spinal segments, a control which many persons lack. Having learned control, the cultivation of the habit of correct attitude ensues.

"EL" NEWS NOTES

Items of Interest Regarding Recent Incidents With Which All Employees Should Be Familiar

NEW BUS ROUTE PETITION

THE Railway, on April 3, filed with the City Council a petition to operate buses on two routes, one between the junction of Atlantic avenue and State street and the Fish Pier, and the other between the South Station and the Army Base. Buses are now being operated over these two routes by Rawding Bus Lines. Upon approval by the City Council and the mayor, and the taking of all other necessary actions by public authorities, the Boston Elevated has agreed to take over the ten Rawding buses now being operated over these two lines, and incidental equipment, at a valuation to be determined by the State Department of Public Utilities.

SERVICE CHANGES IN CAMBRIDGE

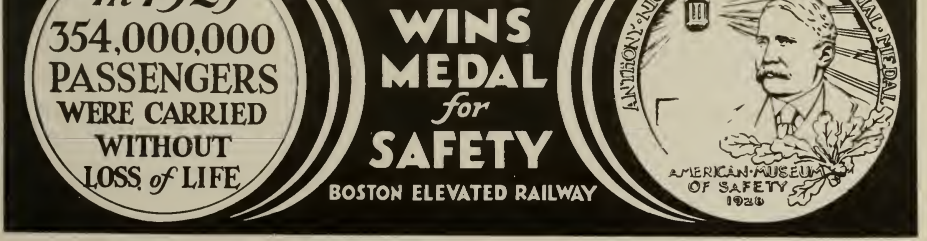
THE final step in the complete removal of surface cars from Prospect street, Cambridge, was taken on March 29, with the operation of a bus line between Porter square and Central square via Beacon, Hampshire and Prospect streets. In addition to all-day bus service between Porter square and Central square, there is now a rush-hour service between the corner of Beacon and Morgan streets and Central square via Prospect street.

For the time being, the East Cambridge-Market street night car, using Prospect street for a part of its trip, will run as usual. Car service is operated between Watertown square and Kendall square via Arsenal street, Western avenue to Central square, thence via Main street to Kendall square. Car service is also operated between Market street, Brighton, and Central square, Cambridge, via Market street and Western avenue.

BRADY MEDALS DISPLAYED

THE Railway management has had Tiffany's of New York make replicas of both sides of both Brady gold medals which have been awarded to the Boston Elevated. One of these medals was received in 1914, the other in 1930. The replicas have been mounted in bronze-finish cases, on black velvet background. One hangs on the outside of the information booth in Park street station. Hidden electric lights illuminate the replicas so that they are visible from a considerable distance. A photograph of one of the cabinets is reproduced on page 76.

As an illustration in this new section is reproduced the clerestory car card which announces to patrons the fact that we have received the award this year, and gives a part of the reason for this happy result.



Clerestory Car Card Which Tells the Safety Story

STORE CLOSINGS

ON account of its effect on "El" riding, the following information from the Boston Retail Trade Board is of interest: From June 15 to Sept. 15 the stores co-operating with the Board will close at 5 p. m. It is probable also that the stores will be closed all day Saturday during July and August.

25-YEAR SERVICE EMBLEMS

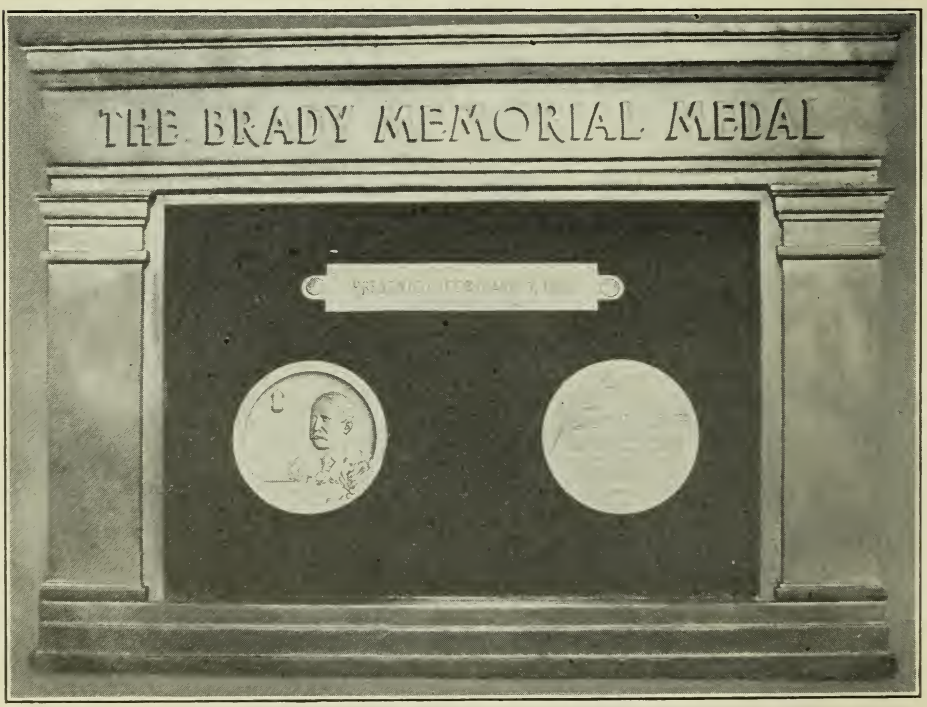
THE management of the Railway will in the near future award to employees who have served for 25 years or more long-service emblems similar in general design to those now being worn by employees of 30 years service or more. The ground of the new pins will be white and five stars will show the length of service, one star for each five years. More than 600 employees will receive these emblems.

ACTIVE CO-OPERATION TO REDUCE ACCIDENTS

THE safety division of the Chamber of Commerce in Chelsea is co-operating with the Railway in efforts to reduce accidents. Considerable work along safety lines has been carried out with the assistance of the public authorities, including restricted parking in several areas, painting of streets to mark pedestrian traffic, etc. While the 1929 record was substantially the same as that of 1928, the 1930 record is expected to show substantial improvement.

HARVARD POWER PLANT DEMOLITION

A LANDMARK long familiar to metropolitan Boston has disappeared, for one of the two 200-foot chimneys of the "El" power station located at Memorial Drive and Boylston street, Cambridge, has been dismantled. This property has been sold to Harvard University, and on the site will be built one of the units of Harvard's new house plan. Because of proximity to the Harvard dormitories and other buildings, explosives could not be used in taking down the chimneys, necessitating razing from the top. One chimney is now entirely down. Work on the other will not be started until the roof of the power house is torn down. The one which has been razed was built in 1907 and the other in 1897. The razing of the first chimney was done by a group of seven skilled workmen who were drawn to the top of the chimney each day in a "boatswain's chair," the rigging for which was first placed by means of ladders, zig-zagged from bottom to top, the foot of one ladder resting on the top of the one below.



BRADY MEDAL CABINET AT PARK STREET STATION

1930 TEAM WHICH WILL DEBATE EDISON EMPLOYEES
Left to right, Max Ross, general counsel's office; J. A. Griffin, transportation; John N. McPherson, Transportation (alternate); F. L. Sullivan, rolling-stock and shops.

WILL ASSIST VACATIONISTS

THE Boston Elevated is one of a large number of organizations listed in the fourth annual directory of recreational literature published by the New England Council. This year's directory, entitled, "New England Is Vacationland," bears a colorful cover by John Held, Jr., and text by Walter Prichard Eaton. It is profusely illustrated with photographs carefully chosen for the adequacy with which they represent New England's unique natural charms, which, investigation has shown, constitute the chief reason why more and more visitors from all over the country are coming to New England every year. The booklet makes special reference to the Massachusetts Bay Tercentenary. Copies may be had free from the New England Council, Statler Building, Boston.

BOWLING LEAGUE SCORES

BOSTON ELEVATED BOWLING LEAGUE

Final Standing

	Won	Lost	Pinfall
Rolling Stock & Shops...	87	21	39484
Rapid Transit Lines	74	34	38807
Repairmen	72	36	37439
Division One	65	43	38210
Salem Street	57	51	37847
Bus Service	44	64	36730
Everett Shops	41	67	36780
Automotive Equipment ..	36	72	35694
South Boston Power	36	72	34391
Supervisors	28	80	35692

High season single (1st), Bunney........	144
High season single (2nd), Marshall......	142
High season three strings (1st), Ritchie..	377
High season three strings (2nd), Potterton	362
High season team single, R. S. & S......	574
High season team three strings, R.S. & S.	1598

Individual Averages
(Bowlers rolling under 30 strings omitted)

Ritchie 102, Wilson 101, McCarthy 99, Foley 99, Doherty 99, Mann 98, Rose 98, Hadley 98, Marshall 98, Reardon 97, Bunney 97, Potterton 96, Swain 96, McCrystal 96, Smith 95, Small 95, Morgan 95, Tower 95, Page 95, Wright 91, O'Brien 94, Murphy 94, Thomas 94, Arnold 93, McLellan 93, Olive 93, Moccia 92, Hasson 92, Fitch, 92, Gilbert 92, Ball 92, Nelson 91, C. Reilly 91, Carter 91, Callahan 90, A. Reilly 90, Castagno 90, Benson 90, Owens 90, Burgess 89, Carney 89, Adair 89, Clinton 89, Cunally 88, Riley 88, Kelley 88, J. O'Keefe 88, Missett 88, Cox 88, Maw 88, Griffin 87, Conley 85, Jewell 84, Beaudoin 84, E. O'Keefe 83.

The retiring officers of the League are: President, Wm. J. Carney; secretary, E. A. O'Brien; scorer, Henry C. Olive. The new officers elected for 1930-31 season include: President, Wm. H. Marshall; secretary, Wm. F. McCrystal; scorer, Henry C. Olive.

The closing banquet, with awarding of prizes, was held on Apr. 29.

BOOST THE TEAM!

Above is a group picture of the debate team which will meet a similar team from the Edison Electric Illuminating Company of Boston, on Thursday evening, May 15, at 7.30. There will be no charge for admission and all employees will be welcome. Admission tickets may be obtained from any member of the committee in charge, which comprises J. B. Flaherty, maintenance department, chairman; J. A. Griffin, transportation department, and W. J. Carney, transportation department. Tickets may also be obtained from H. H. Norris, educational advisor. Tickets which are not distributed beforehand will be available outside the entrance door on the evening of the debate, but it will be safer to secure them in advance as the number of tickets assigned to the Boston Elevated Railway will be limited to its proportion of the seating capacity.

The topic to be debated is a live one: "Resolved that Boston should be expanded to include all cities and towns within a radius of fifteen miles."

The debate will be held at the same place as last year's debate, namely, Union Hall, 48 Boylston street. Note that the date is one week later than the preliminary date announced earlier.

ENUNCIATING

Perhaps the following letter addressed to the "Peoples' Editor" of the Boston Traveler, and published in the issue for Apr. 23, may contain helpful suggestions to "El" employees:

> The Tercentenary celebration and numerous national conventions will draw many visitors to Boston this summer.
>
> In preparation for the comfort of our visitors, why not let's have about two months' wholesome fun, starting shortly, in a competition for conductors and guards of the Elevated system, to be known as, say, "The Clear Enunciation Competition."
>
> We will ask the management of the Elevated to put up a first, second and third cash prize for each division.
>
> We will ask the Boston Traveler to print and publish the voting coupons each day and keep us informed of the standing of the contestants.
>
> We will ask the patrons of the Elevated to listen for the calling of the station and street names by the guards and conductors, and if they are impressed with his good work, ascertain his number, which is displayed on the front of his hat, and vote for him.
>
> As the trains and cars are crowded occasionally and perhaps make it difficult to see their numbers, we would not object if the management would allow them to announce their numbers now and then, such as this, perhaps: "Massachusetts: change here for Cambridge and Dudley street, number 3672."
>
> If the above plan turns out as it should, our visitors will not have to worry about being carried past their stop, and will have everlasting praise for Boston's transit system.

DONOHUE HEADS SUPERVISORS

At the annual meeting of the Boston Elevated Railway Supervisors' Association, held on Apr. 23, James Donohue, general foreman, wire and conduits division, department of power, was unanimously elected president for the coming year. The following vice-presidents were also elected: P. F. Corliss, trackmaster Div. 2 (maintenance), Milton G. Moore, assistant supervisor of automotive equipment (rolling-stock and shops), and E. R. Kelly, district supervisor R. T. L. transportation). Wm. F. McCrystal, clerk R. T. L., was elected secretary-treasurer.

As required by the by-laws, President Donohue, after the election, appointed the following other members of the Board of Control: W. H. Burrell, chief system operator (power), J. B. Flaherty, supervisor of yards and stores (maintenance), J. E. McConnell, foreman (rolling-stock and shops), J. N. McPherson, inspector Div. 4 (transportation).

"EL" MACHINES BEHIND SCENES

THE ROTARY CONVERTER

The place of honor on the front cover this month is given to one of the most wonderful and efficient machines which are behind the scenes on this property. It is a rotary converter of 3000 kilowatts capacity. To those who are more accustomed to mechanical units a rating of 4000 electrical horsepower might appeal more strongly, an electrical horsepower being 746 watts, or about three-quarters of a kilowatt. The function of this type of machine, which by the way is sometimes referred to for short as a "rotary," is to change the power from alternating current form as received from the power plant to direct current form as required for car operation. The power is received at the substation in which the rotary converter is located at 13,200 volts, three-phase, and is passed through stationary transformers for reduction in voltage to about 370. In passing through the rotary converter the power is changed to 600-volt direct current, at which voltage it is distributed to trolley wire or third rail.

T. FRANK JOYCE SPEAKS

The closing meeting for the season of the Boston Elevated Railway Supervisors' Association was held at the instruction school, Sullivan Square, on Apr. 23. The first feature was the election of officers, the results of which are recorded in another column. On behalf of the Association, President Kivell presented to the retiring secretary-treasurer, J. L. Troy, a writing set, comprising fountain pen and propulsion pencil, suitably inscribed with the initials of the recipient.

The guest speaker was T. Frank Joyce, assistant vice-president of the Boston & Maine Railroad, who gave an admirable picture of the recent progress of the B. & M., what it comprises and how it has come about. He quoted former President Coolidge's definition of economy, in substance as follows: Economy is the method by which we provide today for the improvements of tomorrow. This, Mr. Joyce said, was the principle underlying the economies of operation which preceded the improvements which he was about to describe.

The war period left the B. & M., like other railroads, in a run-down state. This was followed by the abnormal financial conditions of the few years ensuing, and the financial stringency reached a crisis. With the coming of Homer

Loring as chairman of the board of directors of the railroad, the credit of the road was re-established and the way paved for a program of improvement. Mr. Loring was responsible for the selection of the late George Hannauer as president. During the three years of the presidency of Mr. Hannauer the improvements were inaugurated. In seven years the B. & M. has spent $100,000,000 on its capital account, practically all of it for new buildings, track rehabilitation, classification yards, etc.

One of the biggest developments has been in the freight-car classification yards in Boston and Mechanicville, N. Y., the western terminus of the Fitchburg Division. Through the application of Mr. Hannauer's inventions it is now possible to sort freight cars much as mail is sorted in the post office. Cars pass over a hump and, through the use of control apparatus in a tower, their speed is controlled by use of Mr. Hannauer's retarders, and at the same time switches are set to divert the cars to the tracks where trains are being made up. More than a score of trains can be made up in this way in the Boston yards at one time. The result is a great reduction in lost time in the yards.

Practically all main-line track of the B. & M. has been rock-ballasted or will be within a year. The standard rail is 130-pound rail, as heavy a standard rail as is used in this country.

The railroad has the new North Station in Boston, made possible by combination with the "Garden," which has been a profitable investment. A 50-stall roundhouse of the "smokeless" type has been built, one of the largest in the world. Here fires are drawn before a locomotive enters the roundhouse, and it proceeds on the stored steam. It is supplied with steam in the house and leaves with enough steam to carry it until the new steam is developed.

Finally, through the co-operation of the employees of all ranks the public relations of the railroad have been greatly improved. The railroad has come through the present depression with a small loss compared with the losses which most railroads have suffered.

At the conclusion of Mr. Joyce's address, there was a short question period and the remainder of the evening was spent in enjoying an entertainment of music, juggling, dancing and dialogue.

Before the entertainment Mr. Kivell expressed his appreciation for the work of the committees of the Board of Control during the year, and of the co-operation of the membership. He said that the success of the first Ladies' Night would probably establish that feature as a custom. Athletic night was also a great success. He read a report from the auditing committee, signed by T. A. Dunbar, showing that more than $100 will be turned over to the new administration, whereas the year opened with a small debt.

RETIRING BOARD OF CONTROL, BOSTON ELEVATED RAILWAY SUPERVISORS' ASSOCIATION

Sitting, left to right, J. L. Troy, transportation, secretary-treasurer; J. E. McConnell, rolling-stock and shops, vice-president; T. F. Kivell, maintenance, president; James Donohue, power, vice-president; W. J. Carney, transportation, vice-president. Standing, left to right, John Manning, power; J. A. Griffin, transportation; A. A. Ordway, rolling-stock and shops; M. G. Power, maintenance.

CHANGES IN THE RESERVE FUND

Fiscal Year 1928-29
July 1, 1928, $1,000,000

July	$331,329.58*	Jan.	$74.244.54†
Aug.	398,356.82*	Feb.	53,235.38*
Sept.	204,840.30*	Mar.	245.409.29†
Oct.	3,135.31†	Apr.	140.661.08†
Nov.	2,583.64†	May	148.719.82†
Dec.	225,043.06†	June	32,187.99*

Profit and loss credit........$180,153.33

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†Excess of revenue over cost of service.

Fiscal Year 1929-30
July 1, 1929, $1,000,000

July	$285,903.19*	Jan.	$195,210.33†
Aug.	361,650.56*	Feb.	18,035.80†
Sept.	197,825.11*	Mar.	178,957.43†
Oct.	64,866.77†		
Nov.	64,148.53†		
Dec.	286,824.84†		

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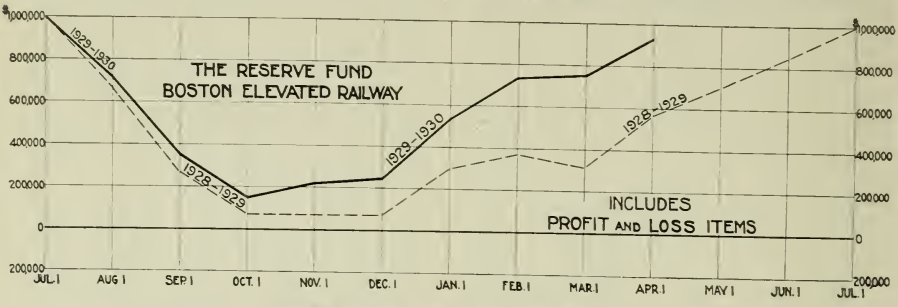
*Excess of cost of service over revenue.



MARCH OPERATION

	1930	1929
GENERAL FINANCIAL DATA		
Revenue exceeded cost of service	$178,957.43	$245,409.29
Operating revenue per car-hour (A.E.R.A. std.)	$5.99	$6.12
Operating revenue per car-mile operated	58.89c	60.63c
Average fare per revenue passenger	9.252c	9.268c
Ratio operating expense to operating revenue	66.55%	65.33%
PASSENGERS CARRIED		
Revenue passengers	31,196,207	32,745,247
Per cent 5c, 6¼c and 7c passengers	19.05%	18.80%
Revenue passengers per car-mile operated	6.148	6.335
OPERATING FACTS		
Trips operated	664,744	668,681
Car-miles operated:		
Rapid-transit lines	1,518,841	1,540,570
Surface, two-man	1,171,365	1,443,564
Surface, one-man	1,737,264	1,562,543
Advertising cars	334	—
Motor bus	645,985	621,747
Total miles operated	5,073,789	5,168,424
ACCIDENT DATA		
Accidents per 10,000 car-miles	1.293*	1.44*
Accidents per 10,000 bus-miles	1.398*	2.11*
Revenue passengers carried per accident	23,500	21,100
Average number of witnesses per accident	3.5	3.22
COMPLAINTS AND DEFECTS		
Complaints in regard to car service	32	28
Employees complained of by car riders	107	133
Car defects reported per 10,000 car-miles	3.4	4.6
INFORMATION ABOUT POWER		
D.c. kw.hr. output gross for month	24,435,070	24,169,100
Maximum kw. load	95,000	89,130
Tons of coal consumed for power	19,361	19,225
Lbs. of coal for power per d.c.kw-hr. at cars	1.778	1.786
Operating and maintenance cost of power, including depreciation:		
Per d.c.kw.-hr. for car service	0.869c	0.822c
Per revenue car-mile	4.46c	4.04c
Kw.-hr. per revenue car-mile	5.132	4.921

*Does not include miscellaneous accidents or derailments.

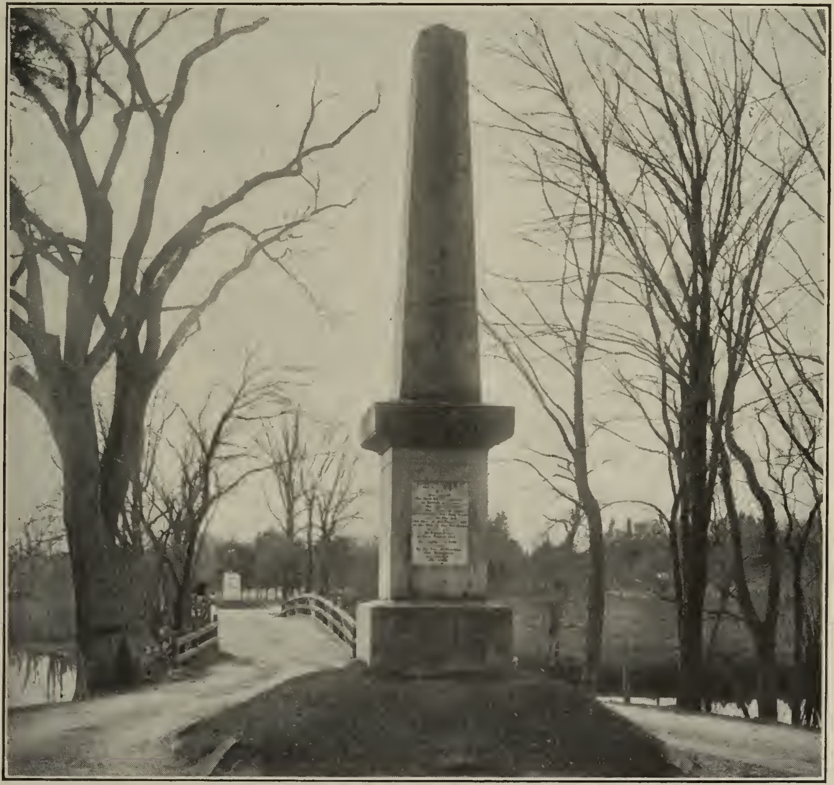
April 22, 1930 EDWARD DANA, *General Manager.*

BOSTON ELEVATED RAILWAY

CO-OPERATION

Volume 9 MAY, 1930 Number 5

PLACES PEOPLE LIKE TO VISIT



TWO SIGNIFICANT MONUMENTS AT CONCORD

(See Page 88)

To All "El" Employees

THE reputation which the Boston Elevated Railway has achieved for courtesy to patrons will lead our tercentenary visitors to look to "El" employees for many little civilities outside the range of their necessary routine.

* * *

Last month I suggested one way in which we can prepare ourselves for this opportunity, namely, that we "brush up" on our knowledge of facts regarding local points of historic and general interest.

* * *

This will pay in self-satisfaction if in no other way, for whenever one is able to answer a question promptly and accurately he feels a real glow of self-approval which is gratifying.

* * *

Of course, this all leads to the general matter of courtesy. Now "Courtesy" is a term that is used so much that it is apt to be used thoughtlessly. It is a fine word, coming down to us from the days when good manners were associated largely with the courts of kings and lesser monarchs. The basis of courtly manners, or courtesy, is now within the reach of all. It consists simply in imagining one's self in the other fellow's place and acting accordingly.

* * *

In other words, courtesy is merely consideration for others.

Edward Dana

BOSTON ELEVATED RAILWAY

CO-OPERATION

VOL 9 MAY, 1930 NO. 5

IMPROVEMENTS IN EAST BOSTON

At Orient Heights Storage for Cars Off the Highway Has Been Provided to Eliminate Obstruction to Traffic, and Otherwise Facilitate Car Operation. Track Facilities Have Also Been Improved at Eagle Street Car House.

IN the East Boston district, improvements are being made near Orient Heights and at Eagle street car house, to meet the situation which has existed where the line of the Eastern Massachusetts Street Railway joins the line of the Boston Elevated Railway. These improvements when made will permit of better operation of cars and the furnishing of better service.

The Boston Elevated Railway has terminated its line since 1907 on Walley street at Gladstone street, East Boston, at the top of a steep grade. The width of Walley street at the top of the hill is only 34 feet between curbs. The outer portion of this line has been operated for many years over tracks of the Eastern Massachusetts Street Railway. For several years there have been repeated requests that some change in methods of operation be worked out to relieve the congested traffic conditions at the terminus of the line operated by the Boston Elevated Railway. The congestion is caused by the cars of the Elevated and Eastern Massachusetts Railways meeting at this point and taking crossovers in order to make their return journeys. They must, in doing so, stand for some minutes in order to maintain regular time-table operation.

Several studies were made of changes that might be possible to relieve the situation and finally a tract of land, located a short distance beyond the present terminus of the line, was purchased. Upon this are being constructed a loop and spur tracks so that the cars standing at the end of the line will not be in any way upon the public highways. These facilities will extend the Elevated service several hundred feet beyond the present terminus, thereby accomodating many people. With the added facilities it will be possible to operate No. 4 semi-convertible cars with trailers.

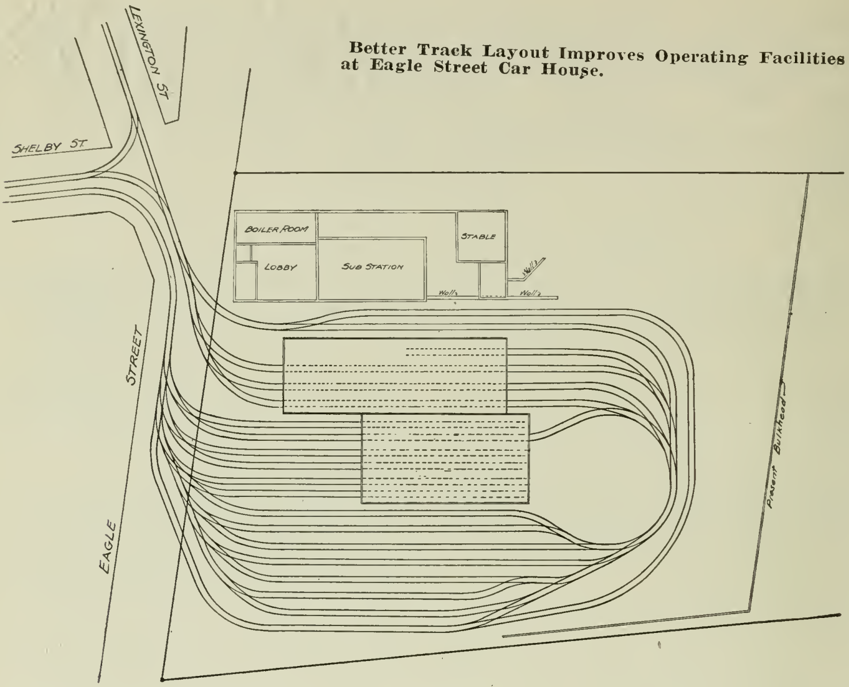
Additional storage tracks are also being provided at the Eagle street car house. This has been done by making a double-end yard with entering tracks at both ends of the car house.

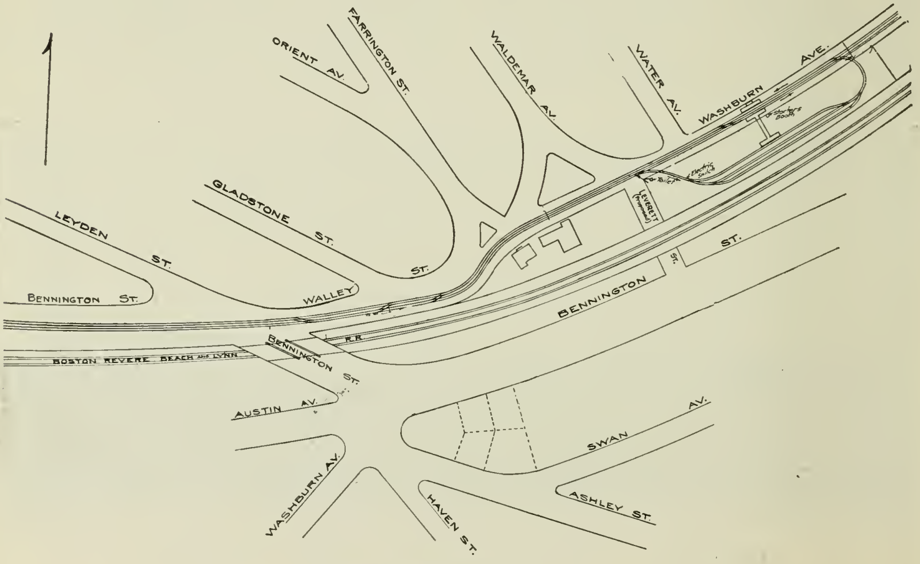
In addition, a track solely for washing purposes has been provided, so that

BETTER TRACK LAYOUT AT EAGLE STREET CAR HOUSE

See diagram on next page.

Better Track Layout Improves Operating Facilities at Eagle Street Car House.





New Loop Tracks at Orient Heights Will Expedite Passenger Transfer.

LOOP TRACKS AT ORIENT HEIGHTS

cars may operate in proper rotation with respect to inspection, repairs, washing, etc.

Plans of both locations are reproduced on page 84. The photographs which are reproduced on page 83 and above show the locations as they appeared when this issue was going to press.

The total cost of the new yard, which included the purchase of 10,000 square feet of land and the placing of 4,000 cubic yards of filling on the open marsh, is estimated to amount to approximately $35,000.

The additional track facilities at Eagle street will cost $16,000.

CHANGES IN PENSION LIST

On May 1, 1930, there were 487 men and women on the pension list. Since the last comprehensive list was published in the issue of "Co-operation" for July, 1928, the following 135 names have been added to the list:

AUGUST, 1928

Benj. C. Clark, carpenter
Alex. S. Rose, conductor
James H. Dayton, car house repairman
Tim. Galvin, warder
Frank H. Jacobs, motorman
Fritz Johnson, warder
George M. Murray, starter
James T. Norton, gateman
O. E. Rasmussen, motorman
Charles H. Rider, foreman pattern shop
Wm. H. Steele, motorman
Joseph J. Surson, painter
Joseph E. Tompkins, painter
George White, clerk, treasury department

OCTOBER, 1928

Charles A. Bauch, superintendent, Div. 1
M. F. Doherty, conductor
Thos. J. Lanegan, motorman
Tim. McAuliffe, operator
Matthew McCarthy, motorman
Jas. M. Moffette, operator
Wm. E. Northup, conductor
Frank M. O'Brien, motorman
John Sullivan, assistant starter
Pat. H. Tully, motorman
Chas. S. Whiting, conductor
R. M. Nilson, warder

NOVEMBER, 1928

Michael Fitzgerald, motorman
G. J. Crisp, repairman
Jos. F. Daley, conductor
Wm. T. Dowd, track cleaner
William Gormley, stableman
Hugh Gormley, stableman
John J. Kelley, court assistant
Chas. W. Muntzman, clerk
Michael J. Madigan, motorman
L. G. Parker, starter
John F. Sullivan, trackman
John J. Wright, watchman

DECEMBER, 1928

John Bingham, night foreman
Frank McAvoy, starter
M. B. Cook, motorman
N. L. Dorr, harness maker
W. H. Hodgkinson, inspector
C. E. Peatfield, general foreman
J. M. Sullivan, motorman
James Sullivan, yard foreman
B. J. McDonough, paver

JANUARY, 1929

G. G. Brown, carpenter
D. P. Connell, carhouse repairman
F. E. Carter, conductor
Wm. Kennedy, sub-foreman roofer
Mrs. M. Robinson, clerk purchasing department
Dan. Sullivan, track cleaner
Herbert N. Shaw, collector
William Kenney, watchman
R. I. MacInnis, carpenter
Joe Masse, track cleaner
P. J. Ormond, starter
Geo. W. Clarke, warder
P. J. Flaherty, centreplate repairman
A. J. Howard, attorney
Thos. J. Keegan, inspector
D. M. Beeman, operator

FEBRUARY, 1929

Neal Doherty, yard foreman
Wm. F. Morrison, operator
Richard Cantwell, crossing tender

JULY, 1929

J. J. Anderson, motorman
P. W. Banks, starter
Jeremiah Cady, track repairman
M. Callinan, operator
Timothy Crean, painter
James B. Eagleston, substation operator
Richard Frank, motorman
Thomas Furlong, trackman
James Guynan, operator
A. D. Haines, painter
N. A. Hallin, mechanic
James Kerwin, repairman
Mark C. Lewis, motorman
P. W. Manning, motorman
M. McCormack, blacksmith
G. B. Nash, wireman
N. O. Nelson, operator
R. S. B. O'Brien, chf. engr. Central Power Station
Carl P. A. Peterson, operator
Thomas F. Quinn, operator
E. H. Robinson, motorman

AUGUST, 1929

Pat. Deechan, car shifter
Mark Ginsberg, operator
Geo. F. Smith, inspector
Duncan Stewart, trackman
Frank E. Smith, armature winder

SEPTEMBER, 1929

Martin Coyne, conductor
Philip J. Dignan, gateman
P. J. Gannon, machinist
Michael Hassett, motorman

(Please turn to page 95)

1930-31 BOARD OF CONTROL, BOSTON ELEVATED RAILWAY SUPERVISORS' ASSOCIATION

Sitting, left to right, E. R. Kelly (transportation), vice-president; P. F. Corliss (maintenance), vice-president; James Donohue (power), president; M. G. Moore (rolling-stock and shops), vice-president; Wm. F. McCrystal (transportation), secretary-treasurer.

Standing, left to right, J. N. MacPherson (transportation), J. B. Flaherty (maintenance), J. E. McConnell (rolling-stock and shops), W. H. Burrell (power).

NEW BOARD ORGANIZES

The Board of Control of the Boston Elevated Railway Supervisors' Association, pictured in the accompanying illustration, has laid out the work for the coming season in a preliminary way. The following committees were appointed at a meeting held on May 5th:

On speakers, J. B. Flaherty, chairman, M. G. Moore, J. E. McConnell.

On entertainment, excepting ladies' night and athletic night, W. H. Burrell, chairman, J. N. MacPherson, P. F. Corliss.

On ladies' night, W. H. Burrell, chairman, E. R. Kelly. This committee will be enlarged later.

On athletic night, to be appointed.

On revision of the by-laws, J. N. MacPherson, chairman, J. E. McConnell, J. B. Flaherty, W. H. Burrell.

HAY FEVER

By a Member of the Staff
Massachusetts General Hospital

HAY fever is not a fatal disease; nevertheless, it causes an amount of discomfort which is often serious. The profuse nasal discharge, the redness and swelling of the eyes, and the continual sneezing, are not only unpleasant, but may be incapacitating, rendering the victim unfit for work or play.

While the discomfort alone demands consideration, hay fever is more important in other ways. The complications may be serious and occur not infrequently. The nasal sinuses, especially the antra, may easily become infected, but more important is the development of real trouble in the ears, caused by the congestion and swelling in the nose and throat. This is one of the serious aspects, and deafness attributable to hay fever is not uncommon. More serious, however, is the fact that as many as one-third of all the cases of hay fever develop asthma, and the possibility that asthma may develop should never be lost sight of. It means that hay fever should always be taken seriously and not neglected.

A single attack of asthma occurring as part of a severe paroxysm of hay fever is disturbing, but asthma tends to be complicated by bacterial infections which make a relatively simple condition more and more complicated until the patient, at the end of a number of years, is worn down by suffering, has lost weight, is harassed by cough and difficult breathing, and is indeed a pitiable object.

The reason why hay fever occurs at certain definite times in the spring and summer is because the sufferer is hypersensitive to the pollen of a particular plant which blossoms at that time. The important "hay fever" plants are those grasses and weeds which occur in great abundance and have a light pollen which is spread about for miles by the wind. The pollen of flowers is heavy and sticky and is spread by insects. "Rose cold" is not caused by the pretty bloom in the foreground, but depends upon the grasses or weeds in the field beyond. The showy goldenrod is of far less importance than the inconspicuous ragweed which blossoms at exactly the same season, about the middle of August, and in exactly the same places.

Lawn grass and hay occur everywhere. both in the country and in the city, and the several kinds, like timothy, red top, June grass and orchard grass, blossom about the first of June and give off pollen until the middle of July. Large numbers of patients have hay fever in just this season.

While the ragweed and grasses are the common causes of hay fever, other plants may also cause trouble. Trees

Avoid Ragweed if Susceptible to Hay Fever like birches, willows, oaks and maples may cause trouble in the early spring; and later in the summer, other weeds like plantain, burdock, yarrow and, out west, the sagebrush, are frequent offenders.

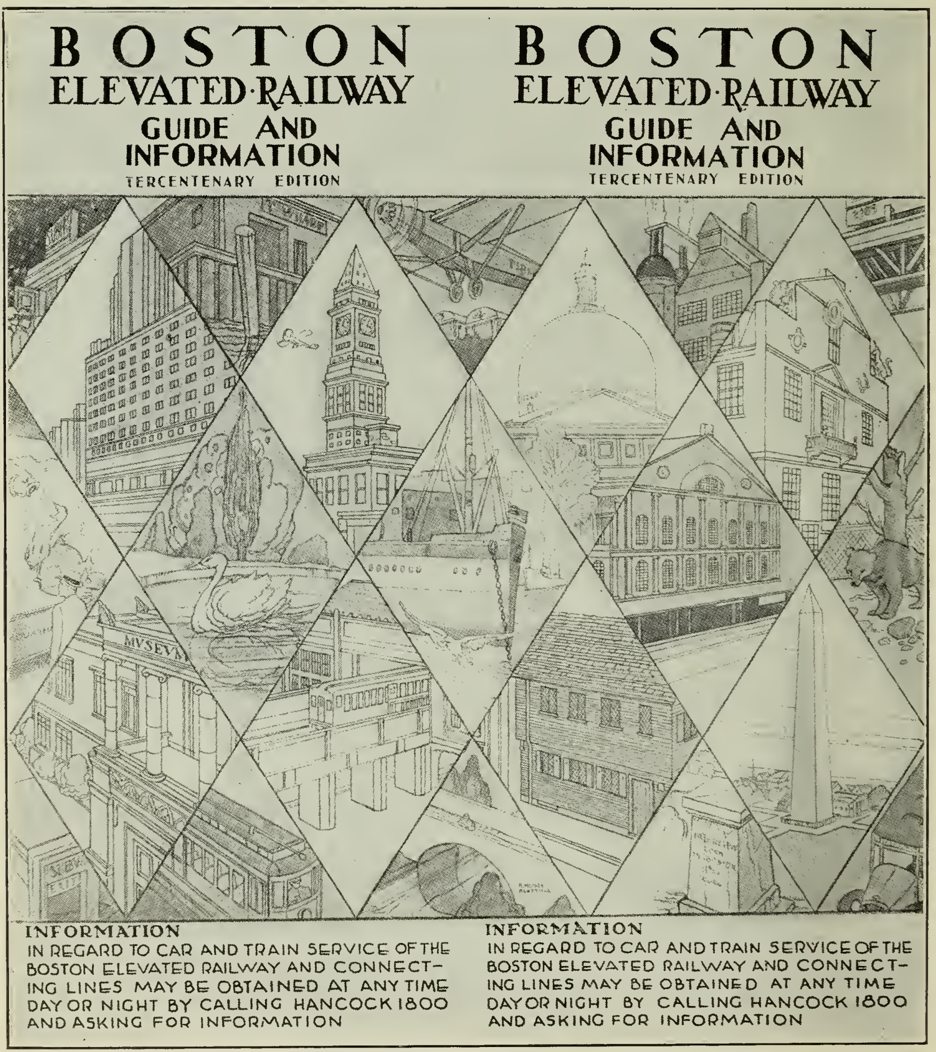
The treatment for hay fever is satisfactory in about 75 per cent of the cases. It consists in a series of doses of an extract of the offending pollen. These doses are given hypodermically at intervals of from three to seven days, and ordinarily about a dozen treatments are necessary. If the symptoms occur in June, treatment should have begun in March or April; if the symptoms occur in August, treatment should begin in early June.

The out-patient departments of most of the larger hospitals have special clinics for asthma and hay fever. The treatment is, therefore, available to all who need it.

THE COVER PICTURE

Concord, from which this month's cover picture is taken, is of vital interest to visitors. The region is rich in historic sites which people like to visit.

Concord is reached via the Arlington Heights car from Harvard station on the Cambridge subway. Change is made at Arlington Heights to the Middlesex and Boston.



BOSTON
ELEVATED·RAILWAY
GUIDE AND INFORMATION
TERCENTENARY EDITION

INFORMATION
IN REGARD TO CAR AND TRAIN SERVICE OF THE BOSTON ELEVATED RAILWAY AND CONNECTING LINES MAY BE OBTAINED AT ANY TIME DAY OR NIGHT BY CALLING HANCOCK 1800 AND ASKING FOR INFORMATION

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ATTRACTIVE COVER OF SIXTH EDITION OF POPULAR FOLDER
Original is in colors

GROUP AT BOWLING LEAGUE BANQUET

"EL" NEWS NOTES

Items of Interest Regarding Recent Incidents With Which All Employees Should Be Familiar

SPECIAL BUS PARTY

MEMBERS of the Massachusetts Legislature were transported by means of nine chartered buses of this Railway to Watertown in the afternoon of Thursday, May 8, to participate in celebrations marking the 300th anniversary of the founding of that town.

Former President and Mrs. Coolidge, Governor and Mrs. Allen and the members of both branches of the Legislature were guests of honor.

The former President and Mrs. Coolidge, the Governor and Mrs. Allen and others in private automobiles joined the legislative cavalcade at Beacon and Fairfield streets and rode out through North Beacon street. After crossing the bridge at the Arsenal the party was joined by a military escort and a mounted band, which led the parade along North Beacon, Mt. Auburn, Common and Columbia streets to the Senior High School, where the exercises were held. Following a pageant by school pupils, Mr. Coolidge delivered an address.

"EL" BOWLING LEAGUE CLOSES SEASON

THE Boston Elevated Bowling League closed its season with a banquet and entertainment at Longfellow Hall, Roxbury, on Apr. 29. Entertainment was furnished by the Timmins Entertainment Bureau. Prizes were awarded as follows:

First team prize, rolling-stock and shops.

Second team prize, rapid transit lines.

Third team prize, repairmen.

Ten highest individual prize winners, Arthur Ritchie, Maxwell Wilson, John F. McCarthy, Thos. J. Foley, Owen F. Doherty, Chas. E. Mann, Chas. H. Rose, Wm. Marshall, Edw. A. J. Reardon, Thos. M. Swain,

SPECIAL PARTY BUSES LINE UP AT STATE HOUSE

High season single, Samuel Bunney.

High season three strings, Roy C. Potterton.

Individuals with highest average on each team not included above, Edw. A. Hadley, Jos. H. McCrystal, Edw. N. Page, Albert G. Nelson, Harold M. Tower, Chas. H. Reilly, Hugh Ball, Walter W. Fitch, Clarence W. McLellan, Henry C. Olive.

ANOTHER WATER MAIN BREAK

On Sunday morning, May 11, 1930, at about 1:20 o'clock, a water main burst on Huntington avenue at the easterly end of Forsyth street crossing, blocking both of our tracks. This is a 20-inch, cast iron main laid about 8 feet under and parallel to the left hand rail of the outbound track on Huntington avenue.

The City water department shut off the water soon after the break occurred and put crews to work making repairs. Car service from outlying points, beginning with the first day car, was operated on regular schedule to the crossovers at Francis Street, opposite Peter Bent Brigham Hospital, and from this point to the break at Forsyth street, a distance of approximately 3800 feet. The inbound and outbound tracks were used alternately in both directions.

On the intown side of Forsyth street car service was maintained to and from the subway, making use of a right-hand permanent crossover located about 250 feet easterly from Forsyth street. Passengers walked around the break, a distance of about 300 feet.

Boston and Worcester cars were turned back at Chestnut Hill until 1:20 p. m. when service was resumed, the cars leaving the regular route at the junction of Huntington avenue and Tremont street, then via Tremont street to Roxbury Crossing and Berkeley street, thence to Columbus avenue to Park Square.

The damage to the track structure was confined wholly to the outbound track where the force of the water washed out a hole approximately 35 feet in length, 8 feet in depth and in width about 12 feet, from the end of the ties extending beyond the right-hand rail of the outbound track, across to the end of the ties extending beyond the left-hand rail of the inbound track.

The ties were removed from the rails so that the water department men could more readily replace the broken water pipe. Before the break could be repaired it was necessary for the gas company to offset the gas main by the location of the break. At the completion of the pipe repairs the city employees filled in the excavation. It was necessary to bring in filling to replace the material washed away.

The maintenance department employees of the Railway then installed the ties and repaired the track. The paving in the crossing was replaced in a temporary manner. Permanent repairs will be made when the filling has taken final settlement.

AT THE SCENE OF THE HUNTINGTON AVENUE WATER-MAIN BREAK

MORE SPECIAL PARTY BUSES AT STATE HOUSE

RIDE 106 MILES ON "EL" FOR DIME

IN the issue of May 8 the *Boston Herald* says that the marathon record for one 10-cent ride on the Boston Elevated is claimed by two Tech students who state that for that sum they were able to keep moving on the Elevated transit system, without duplicating their course, for 11 hours and 15 minutes, by the transfer method, using street cars, buses, elevated and subways. They made the trip to investigate conditions on the "El" but ended by having what they termed a "darned good time."

The Boston Elevated, tracing their itinerary, wrote the students that they had traversed 106 miles during the course of their adventure.

BUS-CAR NIGHT TRIPS

SINCE May 4 the Railway has been operating the night service between Market and Washington streets, Cambridge, and Scollay Square in part by bus and in part by street car. The trips are operated from Market and Washington streets via Western avenue to Central Square by street car where transfer is made to the bus for Scollay Square. The route of these night trips has been slightly changed as follows: inbound, Market street, Western avenue, Prospect street, Cambridge street, Charles River Dam, Leverett, Nashua, Causeway, Portland, Sudbury and Court streets to Scollay Square on the surface; outbound, Cornhill, Adams Square, Washington street, Haymarket Square, Canal, Causeway, Nashua and Leverett streets, Charles River Dam, thence regular route to Market and Washington streets. These cars leave Market and Washington streets at 12:40, 1:40, 2:40, 3:40 and 4:40 a. m. and returning leave Scollay Square surface at 1:08, 2:08, 3:08 and 4:08 a. m.

EDISON DEBATE TEAM WINS

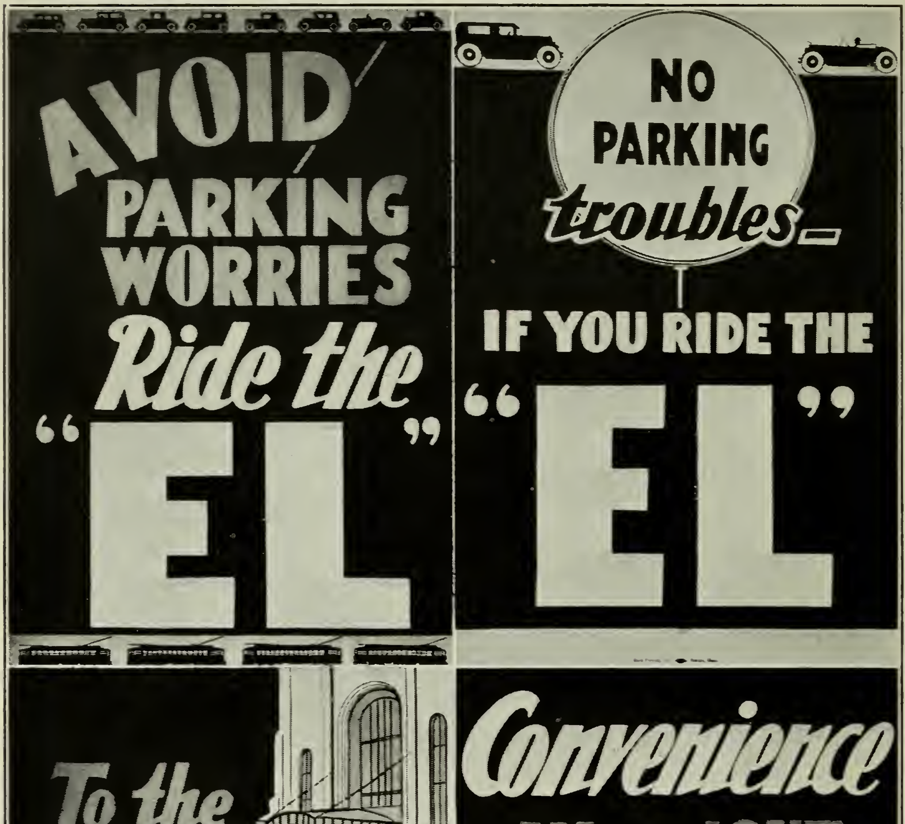
THE second annual inter-utility debate between the teams of the Edison Electric Illuminating Company of Boston and the Boston Elevated Railway was held at Union Hall on May 15, the Edison team being awarded the handsome cup donated by the Edison Company. A group picture of the "El" team was given in the April issue of "Co-operation," page 77. It consisted of Max Ross, general counsel's office; J. A. Griffin, transportation department; F. L. Sullivan, rolling-stock and shops department; and J. N. MacPherson, transportation department, alternate.

The Elevated committee in charge comprised J. B. Flaherty, maintenance department; J. A. Griffin, transportation department, and W. J. Carney, transportation department.

The topic debated was: Resolved: That Boston should be expanded to include all cities and towns within a radius of fifteen miles. This topic was qualified to the extent that it was to be argued in a general way, considering and weighing the benefits and detriments involved by expansion without reference to any particular plan.

The board of judges for the debate comprised: A. J. Boardman, vice-president and general manager. Eastern Massachusetts Street Railway; George Demeter, president Demeter School of Parliamentary Law, and David M. DeBard, sales engineer Stone & Webster Service Corporation.

Both teams acquitted themselves creditably and it was not until the award of the judges was announced by Chairman E. S. Mansfield, head of the educational bureau of the Edison Company, that anyone could judge as to which team was the winner. The chairman expressed the hope that these annual debates would be continued and that other utilities may be drawn into the contests.



STRIKING DASH POSTERS

The Railway is utilizing the advertising space on the car dashes to help sell more car rides.

EDUCATIONAL PROGRAM CLOSES

Climax of Eighth Season Was an Enthusiastic Gathering at the Instruction School on May 8th, with Mr. Dana as Presiding Officer

EXCELLENT music, timely and interesting addresses and general sociability marked the program with which the educational season of the Railway closed on May 8. Mr. Dana presided and introduced as speakers successively Mr. Howard Coonley, president of the Walworth Company, Mr. E. Grosvenor Plowman, industrial relations advisor Associated Industries of Massachusetts, and Mr. Charles Gordon, managing director American Electric Railway Association.

Under the direction of Mr. E. A. Kelley, assistant to the superintendent of transportation, two brief customer-contact dramatizations were given by Miss Elizabeth M. MacLellan and Messrs. A. C. Williams, A. M. Cameron and H. E. Reed.

The music was furnished by the Imperial Concert Ensemble and the Nottingham Singers. A light collation was served at the close and 628 certificates were distributed to 415 employees as tabulated opposite.

In his "keynote talk" Chairman Dana referred to the increasing difficulties of our business, particularly the loss in revenue due to loss in pleasure riding. He complimented the whole organization on the teamwork which has made it possible to make ends meet under these trying conditions.

THE AUTOCRATIC BOSS IS OUT OF DATE

Mr. Coonley, speaking on "The Opportunity for the Individual in Industry," stressed particularly the idea of democracy in management. The day of the domineering official is gone. This he illustrated by a story of Charles M. Schwab. It seems that when a young superintendent Mr. Schwab "felt his oats." He one day chided a workman for a trifling offense. The workman retorted, "Who are you, young fellow?" "I'm the superintendent," said Mr. Schwab. "Well, you've got a good job, and if I were you I'd try to keep it," was what he got in return. Mr. Schwab's sense of humor saved the day and he learned a valuable lesson in democracy.

Mr. Coonley further illustrated his point by experiences of his own company. In one local plant, which prior to purchase by Walworth had been under auto-

CERTIFICATES AWARDED

Transportation Problems	36
Principles of Investment	6*
Accident Prevention	20
Selling Car Rides	86
Practical Supervisory Problems	19
Foreman Conferences:	
First Year	22
Second Year	18
Third Year	17
Fourth Year	22
Boston Elevated Forum	90
Public Speaking	15*
Effective Speech	5
Arts and Crafts	7*
Boston Elevated Railway Supervisors' Association	137
Correspondence Courses:	
The A B C of the Electric Car	51
The A B C of the Motor Bus	77
Total	628

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* Issued by the Division of University Extension, State House.

SPEAKERS IN CLOSING EXERCISES PROGRAM
Left to right, Chas. Gordon, Edward Dana, Howard Coonley, E. Grosvenor Plowman

cratic management, production was low and personnel dissatisfied. A drastic change was made and the modern idea in management was given a fair trial. The result was a new spirit and more economical production.

In another case certain departments had to be shut down. Costs went up, esprit de corps largely disappeared. Mr. Coonley got the supervisory force together and talked plainly, using the analogy of the baseball team. The best of players with no fighting spirit would not win. To get consideration from headquarters the local people must earn it. They buckled to, and profit replaced loss.

Said Mr. Coonley, this is a day of education, with a leaning toward business education. We may learn from everybody with whom we come in contact. It's not the machine that makes success, but the way in which it is handled. It is the attitude toward the job and toward the public.

Referring to the singing by the quartet, Mr. Coonley said what a wide horizon music opens up to the individual; and so with flowers. Books are the entry into a new world; and people mean much by way of education. The man who is always seeking knowledge accomplishes things. And nothing comes without effort. Money in itself does not bring happiness.

Right education (not necessarilv schooling) is simply seeking for greater knowledge. And in a big corporation there are excellent opportunities for the development of the individual.

HEALTH COMES FIRST, SAYS PLOWMAN

Speaking on the topic, "The Intangible Assets of the Boston Elevated Railway," Mr. Plowman placed its present excellent health first. This health in the case of the Railway has several aspects, such as condition or health of the track and structures, sound and healthy equipment, healthy organization both mentally and physically, community good will which is a healthy situation, and excellent employee morale, which is a vital part of the company health.

Health in an individual or a company can be improved only by constant exercise and continuous self-development. This is the basis of the research or development point of view.

Boundless and vigorous health is the prime asset of the Railway. Such health comes from right living, not from industrial doctors.

The service which the "El" is giving is "Quality Merchandise." The Railway is not selling "distress merchandise at bankrupt prices." We can be proud of the fine condition and quality service of this company.

Mr. Plowman used the analogy of the milk-wagon horse as an example of how the individual should not live. It leads a humdrum life. The race-horse, going somewhere, is a more helpful suggestion. Through research and self-development the Boston Elevated Railway is trying to accomplish results, to solve its difficult problems.

"Capitalize health by living," Mr. Plowman said.

EMPLOYEE AS SALESMAN

Mr. Gordon was announced to speak on "The Transportation Employee Can Be a Salesman." He changed this by substituting "must" for "can." This address followed the customer-contact demonstration, to which the speaker referred as one of the most significant of occurrences in our industry. He looks forward to the time when training such as was thus illustrated will be common. He congratulated the Railway for its pioneering in this field.

The customer contact, said Mr. Gordon, is much more difficult in transportation than in other lines of business, even other public utility business. This is due to the fact that contacts are made daily on a large scale and under conditions not conducive to the best of feeling. This refers, of course, to rush-hour riding.

Our difficulties also are intensified by the traffic congestion through which our vehicles must be operated. Relief of congestion must come through improvement in public transportation. Efforts must be directed to improvements in service until people choose to ride in our vehicles because they recognize the superiority of the service.

Every community must have transportation service. Business will come back to our lines, not only because they will be improved, as suggested, but because streets have a limited capacity. They must be used with a view to greatest efficiency for the greatest number. In Mr. Gordon's opinion, congestion of streets has become perhaps the greatest single economic problem confronting modern cities. Its effects are not limited to any particular city or to any part of the country. They are manifest in all of the country's major cities and in many smaller ones as well. In approaching a solution of this problem it should be kept in mind that the movement of people and not vehicles should govern in our expenditure of public funds for the improvement of street and transit facilities. The great difficulty is that an attempt is being made to build automobile cities rather than cities for the general convenience and welfare of citizens.

Approximately 70 per cent of all the

people who use the streets of any modern city for transportation, to and from central business areas, are passengers in street cars. The number of riders each day is aproximately equal to the entire population of the city. Overlooking for the moment whether or not these people can all afford to own automobiles and to use them daily for travel purposes, it is both physically and economically impracticable to provide street facilities for them to do so. There is, therefore, only one feasible alternative, and that is the improvement of public transportation facilities so that this large proportion of daily travelers will be served with the maximum of convenience, comfort and economy.

PENSION LIST CHANGES

(Concluded from page 85)

Mrs. K. Langley, clerk ticket department
John W. Quirk, trackman
Wm. Rusk, machinist specialist

OCTOBER, 1929

R. H. Clark, chief clerk purchasing department
James Ashworth, lathe hand
M. J. Conlon, machinist specialist
Patrick Cottle, motorman
Wm. Donohue, conductor
Thomas Gately, motorman
Martin Guerin, track repairman
T. J. Harney, motorman
James T. Simmons, motorman
F. G. Winchenbach, motorman

NOVEMBER, 1929

Samuel D. Bond, oiler
James Stewart, oiler

DECEMBER, 1929

Wm. D. Bennett, starter
D. B. Cahill, conductor
Thos. Gleason, machinist
A. L. Starrett, carpenter
B. E. Tillson, warder
J. F. Tirrell, conductor
H. W. Woodason, inspector Everett shops

JANUARY, 1930

E. O. M. Fehrnstrom, station receiver

FEBRUARY, 1930

D. P. Burns, motorman
Chas. Clay, watchman
M. J. Croke, watchman
S. H. Fuller, motorman
H. H. Hardy, motorman
J. P. Murphy, drawtender
Michael Sand, trackman
J. T. Shea, motorman
E. J. Sweeney, motorman
T. J. Manning, motorman
A. R. Getchell, operator

MARCH, 1930

Miss L. McLaughlin, clerk, bureau of audit
John D. Werner, machinist

APRIL, 1930

John Conley, paver
T. J. Delaney, operator
Pat. Mannix, oiler
Wm. B. Sanborn, foreman
James E. Murray, storeroom clerk
A. P. Loring, clerk truck shop

Pensioners Who Died Since Last Publication

Eighty-six names are included in this list

AUGUST, 1928

John F. Keefe, starter
Orlando S. Knowles, repairman

SEPTEMBER, 1928

Conrad Bauer, operator
John Jolly, motorman
John McDonald, service car motorman
Jos. E. Tompkins, painter
Prince W. Nash, conductor

OCTOBER, 1928

Benj. F. Moore, crossing tender
S. J. Miller, woodworker
Harry Carville, conductor

NOVEMBER, 1928

Perley E. Harding, motorman
Chas. Blanchard, conductor
Robert R. Glass, warder
J. B. Neal, special officer

DECEMBER, 1928

George A. Sullivan, foreman
Wm. H. Steels, motorman
Anson C. Parsons, machinist
John Kenney, teamster

JANUARY, 1929

B. J. McDonough, paver
E. P. Whalen, motorman
Thomas Conlin, motorman
William Wallace, mechanic
Angelo Pauletto, trackman
J. J. Burns, warder
W. L. Binford, motorman
Michael Tierney, paver
James Main, starter
E. A. Peterson, operator
L. Prior, washer
James Feeney, conductor
John H. Kelley, motorman

FEBRUARY, 1929

Pat. J. Ormond, starter
Geo. B. Jones, conductor
C. W. Kuntzman, clerk
W. E. White, special officer
D. S. Hopkins, hostler

MARCH, 1929

Edward Hynes, cableman
John J. Powers, mechanic
Thos. J. Gregory, operator

APRIL, 1929

John M. Crafts, watchman
John Leighton, gateman
Wm. E. Gray, conductor
J. F. Nadeau, motorman
R. C. Grant, painter

MAY, 1929

Thomas P. Welch, machinist specialist
Geo. M. Murray, starter
Anna F. Ford, clerk

JUNE, 1929

Frank A. Yanda, starter
M. O. French, motorman

JULY, 1929

Edw. Montgomery, clerk
LeBaron Estabrook, trackman
Dennis Devine, upholsterer
J. J. Flaherty, laborer
Gilbert Doucet, station receiver
G. F. Gillis, motorman

AUGUST, 1929

Emma C. Priest, clerk
W. S. Emery, car cleaner
R. I. MacInnis, carpenter
C. S. Whiting, conductor

SEPTEMBER, 1929

John J. Finn, warder
C. P. A. Peterson, operator

OCTOBER, 1929

D. P. Connell, carhouse repairman
G. A. McMenimen, conductor
M. J. Clarke, conductor
D. J. McPhee, woodworker

NOVEMBER, 1929

N. H. Fuller, sub-foreman
D. F. Welch, night clerk
N. Repucci, trackman

DECEMBER, 1929

John Smith, carpenter
Thos. Thornton, motorman
Chas. H. Bond, sub-foreman painter

JANUARY, 1930

H. P. Wheeler, receiver
Jos. N. Wieczorek, machinist
Wm. Rusk, machinist specialist
James Galvin, conductor
William Pyne, motorman

FEBRUARY, 1930

M. J. Dolan, station receiver
Pat. Kenney, stableman
Geo. W. Clarke, warder
T. A. Murray, blacksmith

MARCH, 1930

Eugene Murphy, motorman
Pat. Cassidy, laborer
John F. Canty, carpenter

APRIL, 1930

Thos. Gately, motorman
Wm. T. Burton, gateman
Wm. Dowd, trackman

CHANGES IN THE RESERVE FUND

Fiscal Year 1928-29
July 1, 1928, $1,000,000

July	$331,329.58*	Jan.	$74,244.54†
Aug.	398,356.82*	Feb.	53,235.38*
Sept.	204,840.30*	Mar.	245,409.29†
Oct.	3,135.31†	Apr.	140,661.08†
Nov.	2,583.64†	May	148,719.82†
Dec.	225,043.06†	June	32,187.99*

Profit and loss credit........$180,153.33

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†Excess of revenue over cost of service.

Fiscal Year 1929-30
July 1, 1929, $1,000,000

July	$285,903.19*	Jan.	$195,210.33†
Aug.	361,650.56*	Feb.	18,035.80†
Sept.	197,825.11*	Mar.	178,957.43†
Oct.	164,866.77†	Apr.	54,282.43†
Nov.	64,148.53†		
Dec.	286,824.84†		

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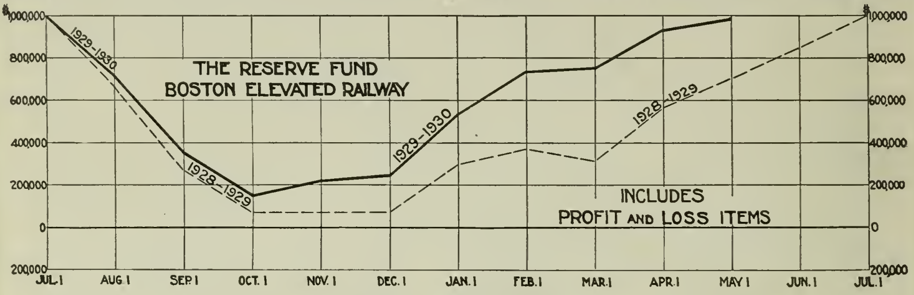
*Excess of cost of service over revenue.



APRIL OPERATION

	1930	1929
GENERAL FINANCIAL DATA		
Revenue exceeded cost of service	$54,282.43	$140,661.08
Operating revenue per car-hour (A.E.R.A. std.)	$5.90	$5.95
Operating revenue per car-mile operated	58.51c	58.68c
Average fare per revenue passenger	9.284c	9.290c
Ratio operating expense to operating revenue	68.76%	66.75%
PASSENGERS CARRIED		
Revenue passengers	29,448,229	30,381,509
Per cent 5c, 6¼c and 7c passengers	18.31%	18.28%
Revenue passengers per car-mile operated	6.125	6.114
OPERATING FACTS		
Trips operated	635,476	641,988
Car-miles operated:		
Rapid-transit lines	1,400,003	1,482,397
Surface, two-man	1,112,829	1,378,158
Surface, one-man	1,643,968	1,507,969
Advertising cars	287	—
Motor bus	650,614	601,028
Total miles operated	4,807,701	4,969,552
ACCIDENT DATA		
Accidents per 10,000 car-miles	1.417*	1.527*
Accidents per 10,000 bus-miles	1.582*	1.665*
Revenue passengers carried per accident	22,720	21,440
Average number of witnesses per accident	3.64	3.4
COMPLAINTS AND DEFECTS		
Complaints in regard to car service	18	19
Employees complained of by car riders	82	82
Car defects reported per 10,000 car-miles	2.7	4.5
INFORMATION ABOUT POWER		
D.c. kw.hr. output gross for month	19,328,800	21,181,870
Maximum kw. load	86,600	85,120
Tons of coal consumed for power	15,004	17,054
Lbs. of coal for power per d.c.kw-hr. at cars	1.749	1.808
Operating and maintenance cost of power, including depreciation:		
Per d.c.kw.-hr. for car service	0.945c	0.887c
Per revenue car-mile	4.03c	3.95c
Kw.-hr. per revenue car-mile	4.258	4.453

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*Does not include miscellaneous accidents or derailments.

May, 19, 1930 81 EDWARD DANA, *General Manager.*

BOSTON ELEVATED RAILWAY

CO-OPERATION

Volume 9 JUNE, 1930 Number 6

PLACES PEOPLE LIKE TO VISIT

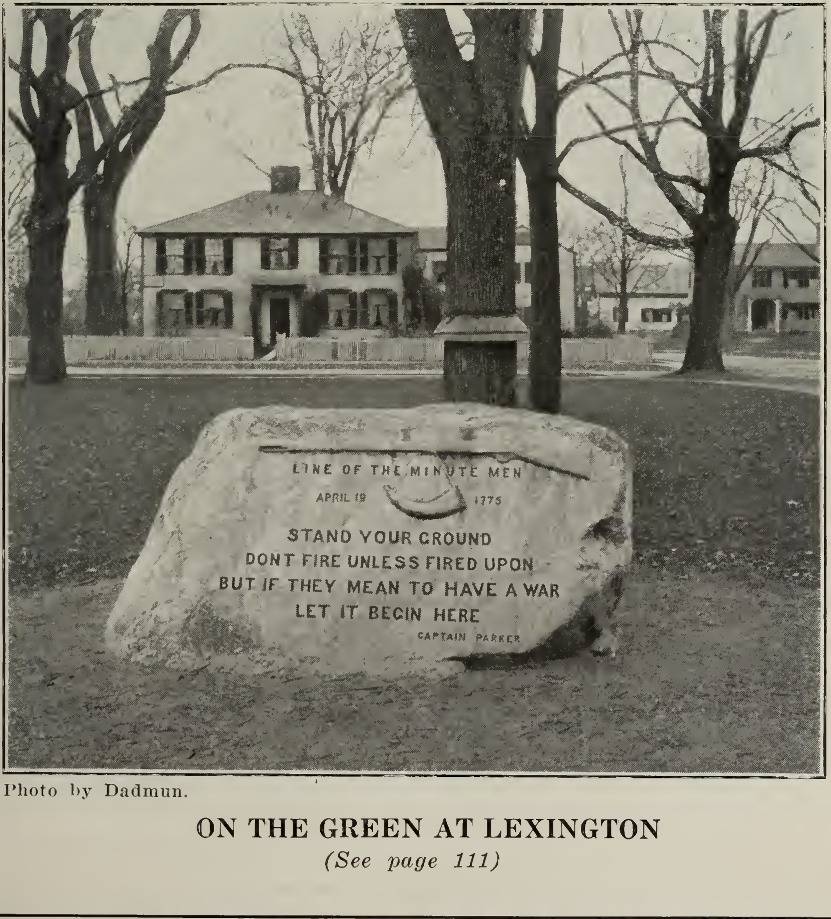


Photo by Dadmun.

ON THE GREEN AT LEXINGTON

(See page 111)

To All "El" Employees

ABILITY to talk, to use the voice to convey thought, distinguishes man from the lower animals. But mere ability to talk is not enough; this great natural gift must be developed if it is to amount to much.

Ability to talk well, that is to talk effectively, is a valuable asset to any man or woman. While it is true that many people talk too much, and too fluently, they do not talk well in the best sense of the word, that is they do not talk effectively.

Probably as good a definition of effective speech as any is the following:

EFFECTIVE SPEECH IS THAT WHICH BRINGS THE DESIRED RESULTS.

To illustrate this, take the case of the salesman trying, largely by means of speech, to sell the housewife a vacuum cleaner. His speech is fully effective only when she "signs on the dotted line" and makes the first payment.

So also, when the conductor asks the passengers to move up in the car so that more passengers may get aboard, his speech is fully effective only when they do what he requests.

A helpful question for all of us to ask ourselves from time to time is, How effective is our speech?

Edward Dana

BOSTON ELEVATED RAILWAY
CO-OPERATION

VOL. 9 JUNE, 1930 NO. 6

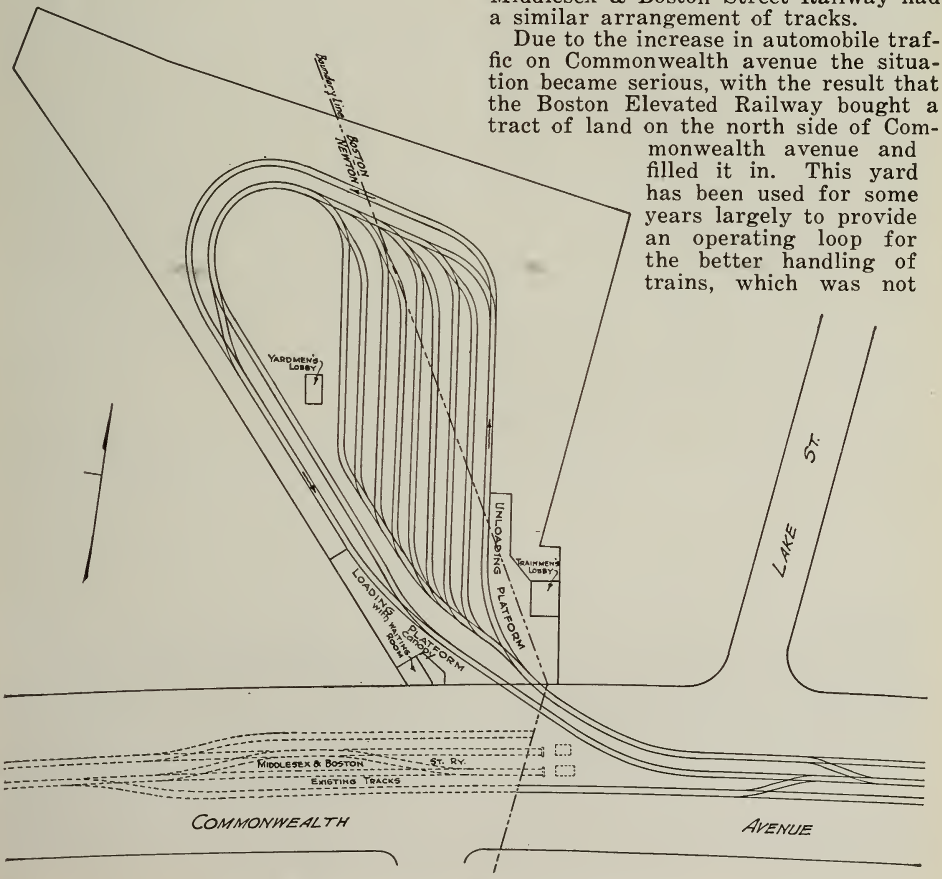
LAKE STREET TERMINAL IMPROVEMENT

Building on Reservation in Commonwealth Avenue to be Removed and Transfer of Passengers With Middlesex & Boston Will Take Place on Site Owned by "El." New Shelter and Waiting Room Will be Provided

AT the storage yard at Lake Street, Brighton, changes will be made during the next two months to provide for quicker and safer operation of single cars and 2-car and 3-car trains and also for better interchange of passengers between the Middlesex & Boston Street Railway and the Boston Elevated Railway.

For many years the interchange of passengers, as well as the shifting of cars, was done in the reservation on Commonwealth avenue. A station was provided, with a shelter, which was jointly owned by the two companies. There were four tracks belonging to the Boston Elevated Railway, with numerous crossovers. Some years ago the Middlesex & Boston Street Railway had a similar arrangement of tracks.

Due to the increase in automobile traffic on Commonwealth avenue the situation became serious, with the result that the Boston Elevated Railway bought a tract of land on the north side of Commonwealth avenue and filled it in. This yard has been used for some years largely to provide an operating loop for the better handling of trains, which was not



THIS WORK IS APPROACHING COMPLETION

FAMILIAR STRUCTURE SOON TO BE REMOVED
Entrance to Yard at Right

possible on the track layout on Commonwealth avenue. Additional storage tracks have been provided. A few years ago a brick lobby was provided for the blue-uniformed men at this location.

The tracks leading to the yard cut across a portion of Newton and it was necessary to obtain a location from the City of Newton in order to accomplish the desired layout. On Nov. 18, 1929, the City of Newton granted the Boston Elevated Railway the right to install a double track across the north side of Commonwealth avenue.

Upon the completion of these track extensions, and prior to Dec. 1, 1930, the present building in the reservation is to be removed and replaced by a shelter and waiting room on the land owned by the Boston Elevated Railway.

Plans were drawn to cover the loading and unloading platforms and arrangements with respect to the waiting room have been made. Contracts are about to be let covering the erection of the waiting room, the concrete platforms with canopies over them, and in the meantime the entire grade of the yard has been raised approximately 3 feet, to provide a double-ended yard with a double operating loop. With the additions, the yard will have a storage capacity of thirty-eight cars during the daytime and a capacity of fifty cars at night. The new ladder track connecting the dead ends of the storage tracks next to Commonwealth avenue will provide for quick and safe operation when changing from single cars to 3-car trains in the morning and evening rush hours. It is expected that these improvements will be completed early in the summer.

STORAGE YARD AT LAKE STREET
See Diagram on Preceding Page

KNOCKS AND BOOSTS

LAST year a large number of comments from patrons were published under the above caption and considerable interest in this feature was aroused. It is well now and then to see ourselves as others see us, and comments from customers are helpful in obtaining such a perspective of "El" service. A few more such comments are given below, in each case with a brief comment pointing out the particular high spots in the letters.

KNOCKS

A lady returning with her son from school found that, while she had a car ticket for herself, she had omitted to bring money for the boy's fare. She states that she explained the circumstances and offered to pay the next day or mail the fare, but was treated uncivilly. She had always found the operators courteous. The operator when questioned stated that he paid for a 6-cent ticket for the lady and the question arose as to whether the boy was old enough to require a fare.

COMMENT. Here was a case of different points of view toward the incident, but the fact remains that the patron thought she had a grievance. Granting that she intended to be reasonable, we must conclude that the operator might have been a little more conciliatory in his attitude.

A woman patron boarded a bus and tendered the operator a transfer, according to her statement. When she was seated the operator singled her out and humiliated her before the other passengers by charging her with having put a cent into the fare box instead of the regular fare.

COMMENT. Circumstances often cause an operator to suspect that a patron has made an inadvertent error or even an intentional one, but such cases have to be handled with the greatest diplomacy. Except in extreme cases it ought to be possible to ask the patron whether possibly an error had been made, without calling the attention of other passengers to the incident, or putting the patron in an embarrassing position.

In paying her fare with a quarter, a lady intended to ask for tickets but failed to do so until after change had been tendered to her. The operator then gave her the tickets but, she states, did so in a very abusive manner. His version was that he did not make the remark attributed to him.

COMMENT. There are two sides to every difference of opinion, but in such a case as this the fact that there was resentment in the mind of the patron indicates that the customer contact was not 100 per cent pleasant. The mistake made appears to have been a not unnatural one on the part of the customer, and one not serious enough to warrant a rebuke.

BOOSTS

A woman patron writes that incidents like the following strengthen our faith in human nature: She had waited over a half hour to rectify a mistake in change. She was impressed by the businesslike way in which a conductor handled the situation and his courtesy in returning a dollar which was due her.

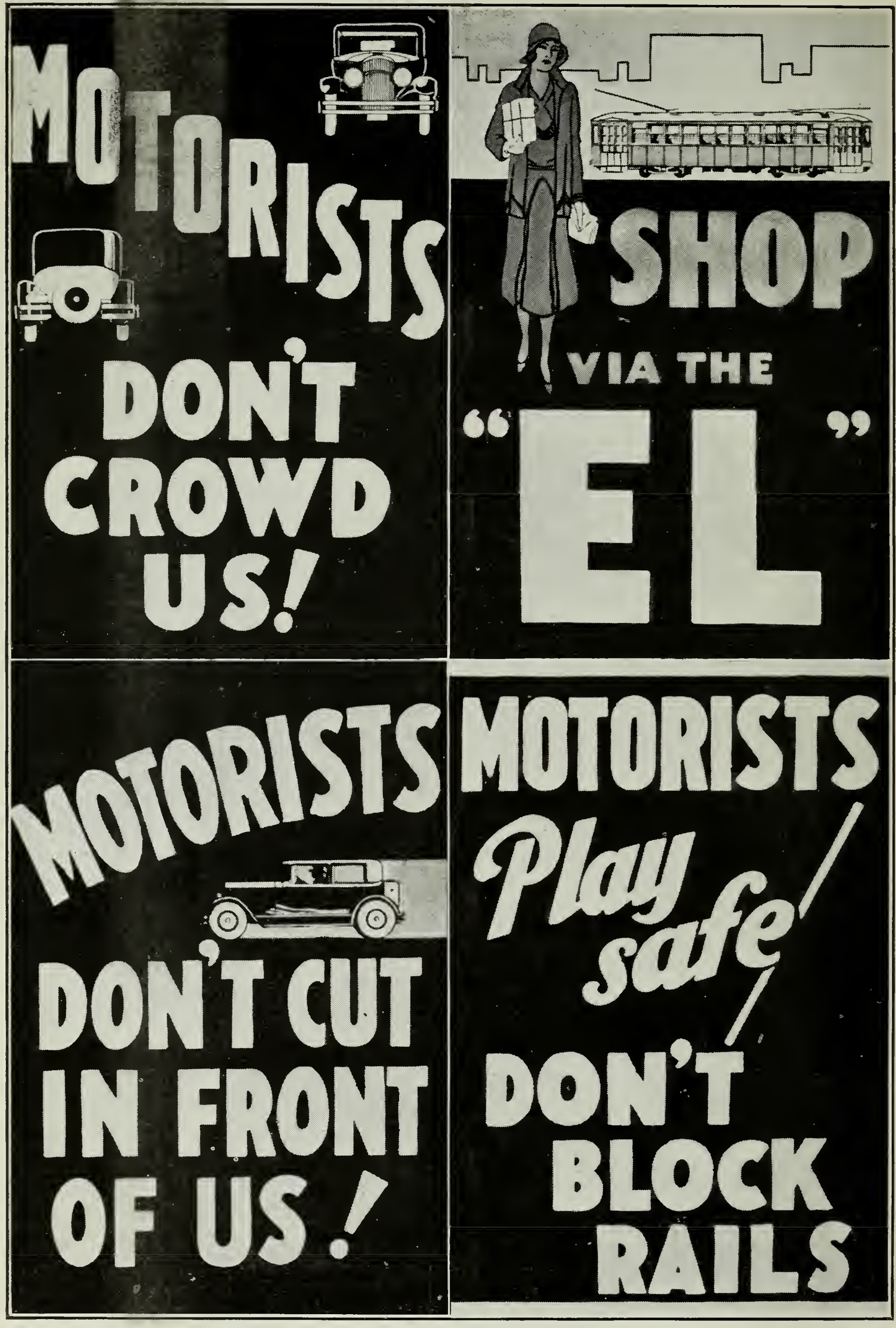
COMMENT, Full details of this incident are not available, but the fact that it strengthened the patron's faith in human nature shows that she was treated with marked consideration.

A representative of an investment concern in Boston writes that since his return from abroad he has been engaged in interviewing men all over the city. He has had occasion to make unusual use of the information booth at Park street station. He writes thus: "I have been amazed to find that they (i. e., the attendants at the booth), remember the locations of even the little side streets that I sometimes have occasion to visit, without referring to a directory or hesitating a second, and always with the utmost courtesy. So far they have not made an error in directing me, but they certainly have saved me a great deal of time."

COMMENT. The giving of information is one of the privileges of all employees, as well as that of the men stationed at Park street station. This is true particularly during this tercentennial year.

A patron left her hand bag in a train going north from Ashmont station at 5:15 in the afternoon. Upon noticing her loss when she left the train at South station, she approached a starter, who suggested that she get into touch with the Harvard square station. She did so and found that it was being held for the owner. Within about three hours after the loss occurred she had her property again. She wrote to the Railway especially commending the courtesy of the men concerned in the transaction, who, she said, were both kind and polite.

COMMENT. Restoring lost property promptly is part of the regular routine of railway operation. However, this may be done in a perfunctory way or with commendable courtesy as in this case. Gratitude on the part of patrons, for such services is a powerful element in building good will for the Railway.



MORE STRIKING DASH POSTERS

The above small-scale reproduction of recent dash posters continue the series of which four examples were given in the May issue of "Co-operation."

"EL" NEWS NOTES

Items of Interest Regarding Recent Incidents With Which All Employees Should Be Familiar

FARE CHANGES

EFFECTIVE July 1, children five years of age and under 14 will have the benefit of the 5-cent fare except between 1 A. M. and 5 A. M. The 5-cent fare for children will continue to and including Labor Day. Children under 14 are thus entitled to the same privileges as passengers paying a 10-cent fare. No special tickets will be issued.

SAFETY ON THE ELEVATED

On May 27 the *Boston Herald* carried the following editorial comment on the publication of "Safety on the 'El' ":

> The Boston Elevated Railway is well warranted in publishing its handsome book of 200 pages with the title "Safety on the 'El'." The Anthony N. Brady gold memorial medal was recently awarded to the road for its safety record in 1928. Manager Dana says in his foreword: "I wish here to state publicly that the truly remarkable record of the Boston Elevated in the reduction and prevention of accidents was made possible only through the splendid co-operation of the men and officials of the railway."
>
> The larger part of the book is made up of the report prepared by the Elevated for submission in the competition for the Brady medal. It describes the efforts of the system to obtain the good will and assistance of the public, the engineering devices and methods used for the protection of the public, how the road has "led the entire electric railway industry in research and practice with respect to individual accident proneness," the work of the men in uniform who operate the cars, the health protection measures in use, and the results of the whole campaign as shown in tabulations, charts, and photographs. For instance, here is one very striking "box" in the display: "In 1928 the Boston Elevated Railway operated 52,274,776 miles, and carried 604,695,199 passengers, without causing the death of a single child. Estimated number of children in Metropolitan Boston, 400,000."
>
> The news columns carried the announcement of the award at the time it was made. This book contains a permanent record of how it was won. It shows also in an appendix that continued progress was made in 1929, holding that there has been a "more complete realization" of benefit from the safety program than in any other year. This is both public service and good business, and the road properly puts the public in possession of the facts.

GENERAL MANAGER ON CONVENTION PROGRAM

AT the annual convention of the American Electric Railway Association held in San Francisco from June 23 to June 26, Mr. Dana, who is a member of the executive committee, delivered an address on "Conference Training—Its Technique and Possibilities." He also presided over meetings of the committee on "Employee Relations," of which he is chairman. He is now on vacation and, during his absence, H. Ware Barnum, general counsel, is acting as general manager.

CAR OPERATED BY RADIO

AN advertising "stunt" of considerable interest to the public was the operation by radio of a Boston Elevated car on several Back Bay streets on May 29. On the car were representatives of the Railway and the newspapers, and other guests. The power was turned on and off through relays actuated by "wireless" impulses from a transmitter carried in an automobile. The brakes were set up lightly all the time, so that when the power went off the car stopped. This "stunt" is an old one but is of some interest as illustrating remote

CAR EQUIPPED FOR RADIO CONTROL

control by radio, which has practical application in other fields. The Railway had no part in the demonstration except to furnish the car, to route it and to supervise its operation.

EMPLOYMENT CONDITIONS ON THE "EL"

IN its issue of May 27, the *Boston Post* carried the following letter from Mr. E. A. Johnson, trustee of the Railway, in response to a letter which had appeared in the same newspaper the day before:

Sir—I give you herewith some pertinent facts in reply to letter of Representative James J. Twohig which appeared in your issue of today.

During recent years the Boston Elevated has encountered a reduction in summer riding and Sunday riding which has resulted in the total number of passengers for the year being reduced. At the same time the week-day riding during eight months of the year 1929 was even greater than it was in 1917, the year of greatest total passengers carried on the Elevated. The average revenue passengers carried per day in August, 1929, was 835,559, whereas in December, 1929, the average was 1,040,942.

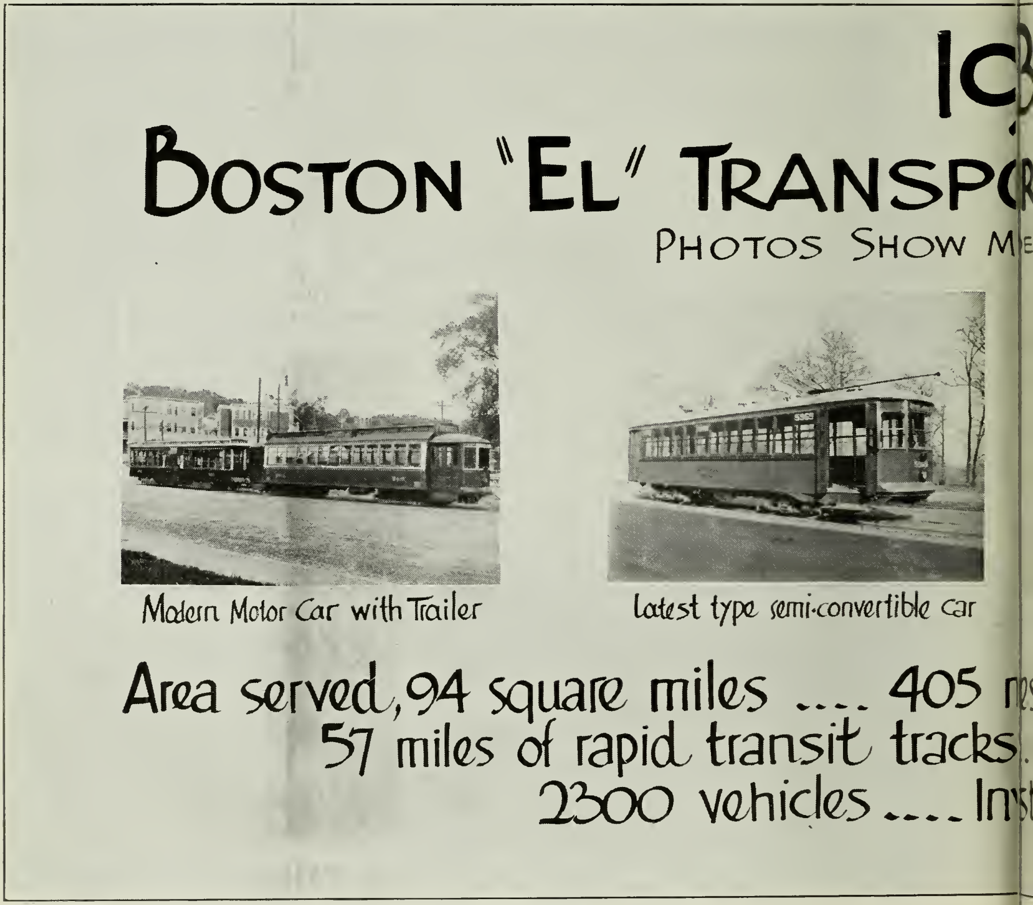
Unless management was alert and attempted to adjust operating expenses to meet this wide fluctuation in income, a deficit would result, which in turn under the Public Control Act would force an increase in fare.

The result is that during the summer season men are laid off, and this is something that has regularly occurred during recent years.

It is interesting to note that the average wage for the year 1915 was $17.80 for the 8590 Elevated employees, whereas for the year 1929 the average wage for 8044 on the payroll, notwithstanding the layoff, was $39.35. Since the operation of the Elevated under the Public Control Act all employees have a guaranteed eight-hour day (which insures eight hours' pay to all men in service), a six-day week and a vacation with pay (10 days this year and two weeks next year). The employees of few, if any, of the other railways in the country enjoy all of these privileges.

For the year ending June 30, 1930, the Boston Elevated railway will have received approximately two million dollars less in gross revenue than it received for the year ending June 30, 1927. That no deficit has occurred or raise in fare resulted has been due to capable management and co-operation of the working forces.

The dividend rental of three million dollars and the subway and tunnel rentals of two



IC

BOSTON "EL" TRANSP

PHOTOS SHOW M

Modern Motor Car with Trailer

Latest type semi-convertible car

Area served, 94 square miles .... 405 r

57 miles of rapid transit tracks

2300 vehicles .... In

SMALL-SCALE REPRODUCTION OF LARGE

"Investment in equipment" here refer

and three-quarter million dollars are not subject to control by the board of trustees but are required under existing laws enacted by the Legislature.

It has been the position of the board of trustees for many years that it is not fair to place the entire carrying charges of subways and tunnels upon the car riders.

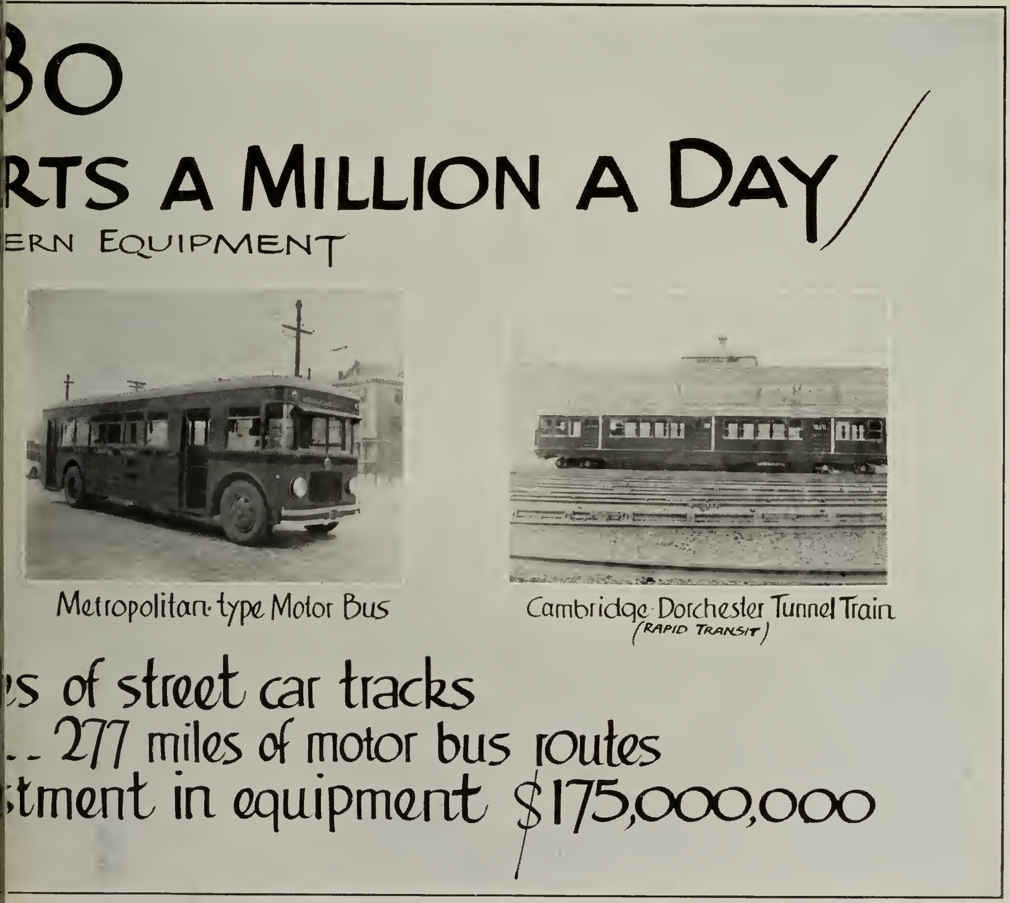
BOND ISSUE APPROVED

THE department of public utilities has authorized the trustees of the Boston Elevated Railway Company to issue $1,200,000 30-year 6 per cent coupon bonds, on or after July 1, 1930, the proceeds to pay or refund part of the two issues of bonds of the West End Railway Company amounting to $1,604,000, maturing on July 1, 1930. Any excess in proceeds which may be realized from premiums, shall be held for future additions and improvements to property. The company may elect to place a call price of 101 on the issue to be effective in two years from date of issue.

BUS STANDEE NOTICE

ON June 6 notices addressed to passengers were posted in all buses operating in Boston, stating that a Boston city ordinance forbids bus operators from permitting any person to stand inside and that operators are directed not to admit a greater number of passengers than the number of seats and not to permit any person to stand inside. Notices to this effect have already been posted in buses which operate in the city of Cambridge.

Boston and Cambridge are the only communities in which the Boston Elevated operates which do not permit standees in buses. The ten other cities and towns in which the Elevated operates permit persons wishing to stand to do so to a number not more than 25 per cent of the seating capacity, the standard fixed by the State Department of Public Utilities.


30
RTS A MILLION A DAY
ERN EQUIPMENT
Metropolitan-type Motor Bus
Cambridge-Dorchester Tunnel Train
(RAPID TRANSIT)
s of street car tracks
.. 277 miles of motor bus routes
tment in equipment $175,000,000

T EXHIBITED BY WM. A. FILENE'S SON
e total investment in the property.

GENERAL ORDER NO. 188

SUPERINTENDENT of Transportation James Smith has issued an order designed to assist employees in protecting themselves in accident cases. The order states:

"When accidents occur statements are frequently made by persons concerned in the accident, something as follows: 'It was all my fault.' 'The auto was not damaged and I was to blame.' 'I swung into car to avoid hitting boy on bicycle.' 'This is the second time I have fallen today.' 'It was my fault; the motor stalled.'

"When such statements or other statements of a similar purport are made by the persons concerned in accidents, it is important to have them reported in the accident report. The statement would be much more valuable if the person concerned in the accident would write it in his own hand writing on the back of the card and then sign the card.

"Such information would protect the operator and would be of valuable assistance to the Railway.

"All employees are urged to cooperate and secure and turn in records of such statements wherever possible."

SERVICE CHANGES

THE auxiliary line operated since last December, during the day, from Lechmere station through the Boylston street subway to Washington and Beacon streets has been suspended for the summer.

Since June 7, the car line formerly operating between Harvard square and Dudley street has been operating between Central square and Dudley street. Bus service has been substituted between Kendall and Harvard squares for the car service omitted. The buses are routed along Massachusetts avenue to Central square and then along Main street to Lafayette and Kendall squares.

Also since June 7, the line formerly running from the Watertown car house along Arsenal street and Western avenue to Central square and along Main street to Kendall square and the Western avenue line have been operating only to the Green street loop at Central square. The change was made to insure greater regularity of the cross-town service between Central square and Dudley street.

Bus service on River street, Mattapan, between Pierce square and Standard street was discontinued after June 8.

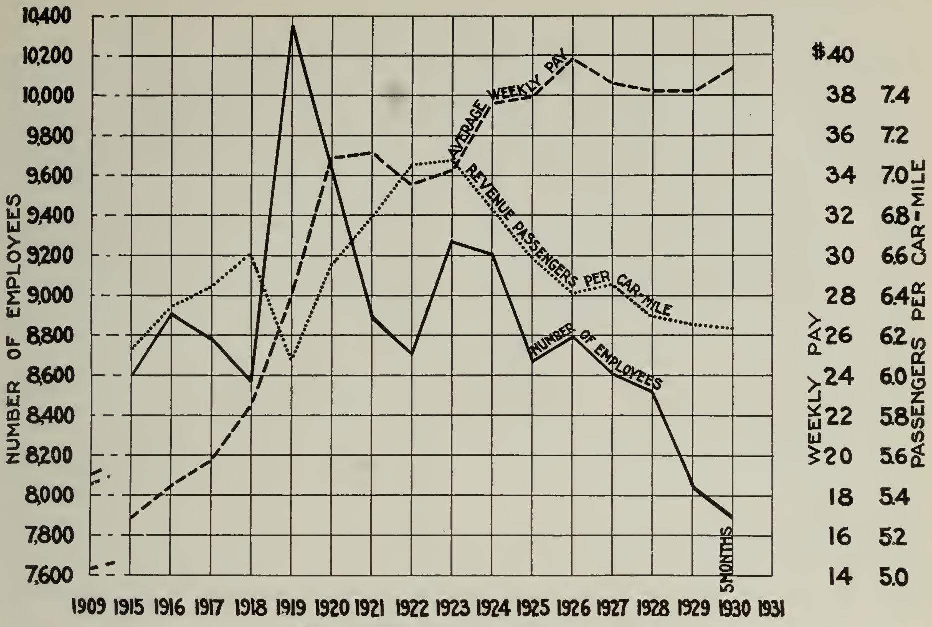
"EL" TRANSPORTS SCHOOL CHILDREN

ONE hundred and sixty special cars and eight special buses were used to carry the cadets participating in the Boston school parade on June 6. This parade required a wholesale diversion of regular traffic, which was accomplished smoothly.

A parade of 9,000 school children was held in Everett on June 4, in connection with the tercentenary celebration. The children of 4th-grade age and under were transported by the "El," a total of 4,019 children. For this purpose thirty-three extra cars were needed to bring the small children to the High School where they entered the parade. After the exercises twenty-three cars were used to take them home. The heat was intense on June 4, so that the special "El" service was unusually helpful.

The school children's pageant in Fenway Park on June 10 required diversion of cars ordinarily routed along Brookline avenue and Boylston street.

"EL" TRACKS SUFFERED IN L STREET BRIDGE FIRE



EMPLOYEE AND PASSENGER DATA

EMPLOYEE AND PASSENGER DATA

The above chart shows that, while passengers carried per car-mile number about six, as they did fifteen years ago, wages have more than doubled during the same period. Obviously the Railway could only provide for the greater wage cost by increasing fares and by using labor-saving devices and practices. The fares were substantially increased and at the same time the use of 1-man car operation was introduced.

As explained on page 108 of this issue, the data of revenue-passengers per mile for 1922, 1923 and 1924 are not strictly comparable with those for the other years, due to the method of accounting used then, for passengers who made single journeys for which they paid two 5-cent fares. Such passengers were counted twice. Also, the substitution of 6-cent tickets for 5-cent cash fares in November, 1924, often resulted in the payment of a 10-cent fare by such a passenger, with a consequent apparent reduction in the record of total revenue passengers carried.

By reference to the chart it will be observed that, to save space, the data between 1909 and 1915 have been omitted, a break in the diagram representing this intervening period. However, the values for 1909 are given for reference, the short lines indicating not only the number of employees, the average weekly pay and the passengers per car-mile for that year, but also the way in which these quantities were increasing at that time.

CHANGES IN PENSION LIST

Last month the pension list was stated to contain 487 names. Since then seven names have been added, and five pensioners have been reported as having died. The list is as follows:

Edward C. Fowler, chief engineer, Everett.
Thos. Dawson, operator.
Dennis Dacey, asst. foreman R. T. shop.
Wm. Flynn, groundman.
Andrew Johnson, operator.
James Mills, truck driver.
C. S. Morrin, station receiver.

The following are reported as having died since the last statement:

Wm. Kennedy, sub-foreman roofer.
J. A. Archibald, motorman.
Thos. Kinsella, oiler.
P. J. Norton, motorman.
H. W. Woodason, inspector, Everett shop.

An educational bulletin of the Canadian Pacific Railway contains some notes on this subject. The writer states that the best thing learned in the Army was how to take orders. "One learned that it does not lessen self-respect to do as he is told by whomever is in command, and to do it promptly, with care and correctly. The right taking and following of orders is just as important here in your work. The organization (Canadian Pacific) is a little army, and we cannot expect continued success in our business unless every one takes orders cheerfully."

CHANGING CHARACTERISTICS OF "EL" TRAFFIC

Charts Are Presented Showing That, While Holiday and Sunday Traffic Is Declining, Week-Day Traffic Is More Than Holding Its Own. During the Heavy-Traffic Season There Is an Increase in Week-Day Riding

THE effects of automobile competition on the business of the Boston Elevated Railway are clearly seen in the accompanying diagrams, which are presented for the first time. Below on this page appears a diagram plotted from the average daily figures for revenue passengers carried during the entire year, from 1917 to 1930 inclusive. In examining the graphs it will be necessary to bear in mind that the data for 1922, 1923 and 1924 are out of line, for the reason explained in the foot-note. If the same basis of accounting for the revenue passengers had been used during those years as was used during the other years, there would not be the sharp peaks that now appear in the lines.

Starting back in 1917 there was a drop in traffic due to several causes. First and most important, for the time, there were increases in fare from the previous 5-cent fare, finally to the 10-cent fare. The reaction from war-time activity also had its effect. Then, the rapidly increasing use of the automobile was cutting into the Railway's business substantially.

The effect of the automobile on holiday and Sunday riding was especially marked. Patrons of the Railway who formerly used our cars for recreation and for getting to recreation points on our system were forming the habit of using their cars for these purposes.

Fortunately, the facts regarding the back-bone of the traffic are much more encouraging. After all, Sundays and holidays total only about one-sixth of all the days in the year. A comparatively large decrease in traffic on these days, therefore, can be offset by a relatively small increase in traffic on the remaining days. By and large, the Saturday and week-day traffic has not fallen off substantially.

Fig. 1 shows the conditions for the entire year. Every "El" employee knows, however, that summer and winter traffic conditions are quite different. It is desirable, therefore, to examine the data for the more profitable portions of the year, in order to determine how the business in those portions is holding up.

Fig. 2 shows the conditions for the eight months from October to May in-

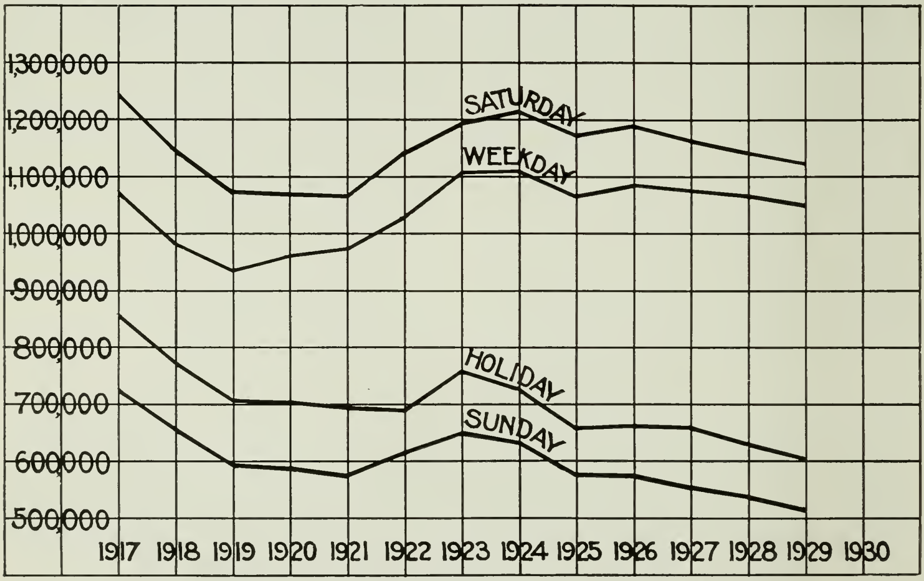


FIG. 1. AVERAGE DAILY REVENUE PASSENGERS CARRIED
Arrange for Entire Year

NOTE:—During the years 1922, 1923 and 1924 one passenger making a single journey for which he might pay two 5-cent fares was counted as two revenue passengers. The substitution in November, 1924, of 6-cent tickets for 5-cent cash fares often resulted in the payment of a 10-cent fare by such a passnger with a consequent reduction in the Railway's figures of total revenue passengers carried, although the gross passenger revenue for the year 1925, which increased $371,269.51 over the preceding year, would indicate substantially the same number of passengers carried by the Railway in 1925 and 1924. This note applies also to Figs. 2 and 3.

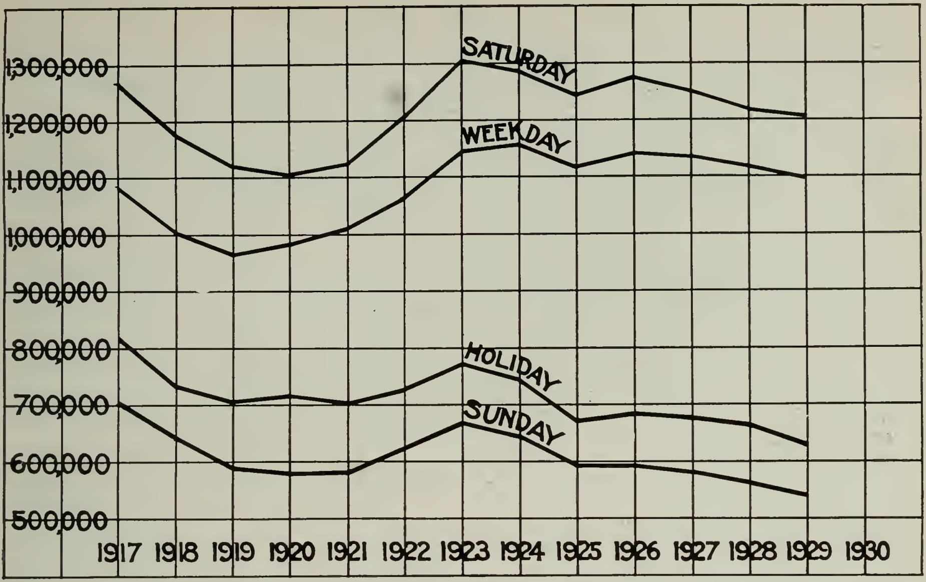


FIG. 2. AVERAGE DAILY REVENUE PASSENGERS CARRIED
Average for October to May, Inclusive
(See Note under Fig. 1)

clusive. Here, while the holiday and Sunday traffic still shows a tendency to shrink, this tendency is not so marked. The other traffic shows an increasing tendency, especially the week-day traffic, which is after all the most important traffic that we have.

And this tendency is shown to a still more marked degree in Fig. 3, wherein are plotted the data for the best five months of the year, November to March inclusive.

It is true that even the week-day traffic shows a slightly downward trend at the moment, but this is probably only a transient situation. We must consider traffic tendencies over a term of

(Please turn to page 111)

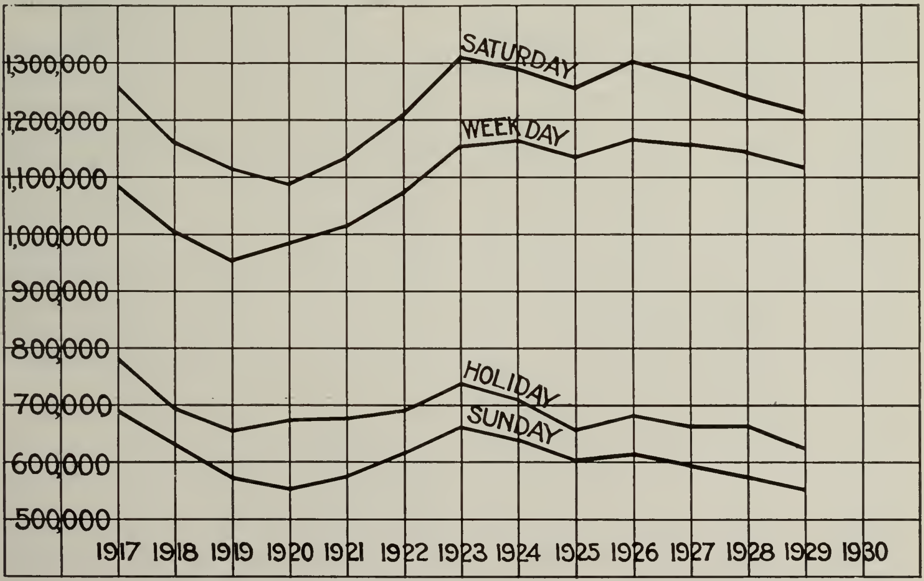


FIG. 3. AVERAGE DAILY REVENUE PASSENGERS CARRIED
Average for November to March, Inclusive
(See Note under Fig. 1)

GOOD STOCKS FOR BAD

An Official Article From the National Better Business Bureau, Inc., Affiliated With Nearly Fifty Local Bureaus From Coast to Coast—It Tells About "Switchers" of Securities and How to Avoid Them

"SWITCHING" investors from one stock to another, a practice that has resulted in many recent complaints to the National Better Business Bureau, is frequently used as a scheme to defraud. Honest salesmen or brokers who recommend the exchange of any of your securities encourage and aid you to obtain all the facts. They do not discourage independent investigation nor do they switch you from good stocks to bad.

The dishonest "Switcher's" method is to deride the value and future prospect of your stock. He may tell you your stock is now worthless or that it will shortly tumble in value. He gives various reasons in support of his contention. Yet he offers to take your "bad" investment off your hands, and absorb the "loss" himself, if you will exchange it for the particular issue which he recommends. He urges immediate action and endeavors to clinch the "switch" at one interview.

Any worthless or unprofitable stock which you hold will be just as worthless or unprofitable to a security salesman or his employer as it is to you. Why, then, is the "Switcher" willing to relieve you of your "undesirable stock"?

Unscrupulous salesmen employ the switch method, in many instances, to raid stockholders of valuable securities. They may offer an absolutely worthless security in exchange, or a new and untried security, or one that has been dead or inactive for years. Whatever they offer, however, will be represented as "gilt edge."

In some instances unscrupulous salesmen have created confidence in themselves and laid the groundwork for the switching by first selling legitimate securities. Such sales may be induced with the aid of unauthorized letterheads, cards, circulars, etc., supposedly published by the company in which stock is offered. Later, this clientele becomes the field for the switching operation. The "Switcher" returns to customers with certain dire information regarding the stock he sold them and as a protection against vanishing values he recommends an immediate switch to his quesionable, if not worthless, security. The switch may or may not entail an additional investment.

When urged to "switch" any of your securities, get all available information before taking any action.

Investigate the reliability of the salesman and the house he represents.

Investigate the security offered you in exchange.

Has the company a successful record?

Has the security a good dividend record?

Has the security a good earnings record?

Has the security sound future prospects?

Has the security a quick resale market?

Has the security a loan value at your bank?

Has the security a fair market price?

Investigate, if necessary, the security you are asked to trade in with the same thoroughness. Give the company whose securities you hold an opportunity to present its side of the story.

The "Switcher's" proposition is one in which he expects to gain. It may be at your expense. Get the facts!

Any investor can obtain information by inquiring at any Better Business Bureau or any financial institution of good repute in his community.

Before You Invest—Investigate!

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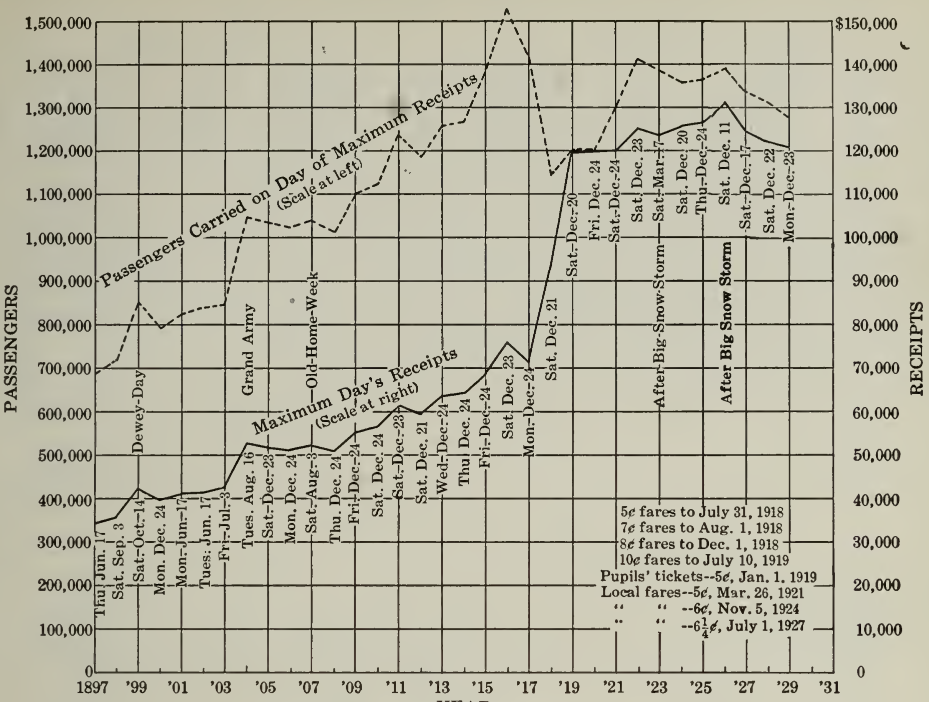
*Copyright, 1930. National Better Business Bureau, Inc.

NO TIME LIMIT ON CORRESPONDENCE COURSES

The correspondence courses, A B C of the Motor Bus and A B C of the Electric Car, can be finished at any time and certificates will be awarded soon thereafter. Registrants who finished the courses before the closing exercises were awarded certificates at that time, but those who did not finish in time for that purpose should do so as soon as possible. All who finish during the current season will be invited to next year's closing exercises. It is suggested that the current courses be finished promptly so that those who wish to continue with the correspondence courses may be in a position to register for new courses next fall.

The centennial of steam railroads in New England, dating from the charter granted the Boston and Lowell Railroad Corporation on June 5, 1830, was celebrated in Lowell with formal exercises, parade and community demonstrations on Thursday, June 5, under the auspices of the city and the Boston and Maine Railroad. Mayor Thomas H. Braden had previously issued a formal proclamation for observance of Railroad Centen-



RECORD DAYS ON THE "EL"

nial Day with connotation of the industrial expansion which New England has enjoyed in the past century, fostered by the railroads which had their beginnings here.

THE COVER PICTURE

This familiar monument on the green at Lexington will be one of the objects of most lively interest to tercentenary visitors. "El" employees will be asked many times this year: How can I get to Lexington? The answer is, of course, take the Cambridge subway to Harvard station and there take our Arlington Heights car. From Arlington Heights the Middlesex and Boston bus will enable the passenger to complete his journey in short order.

"EL" TRAFFIC

(Concluded from page 109)

years, just as general business conditions are studied by those in close touch with industrial, political and commercial conditions. The future favors the electric railway in large cities because congestion is making the use of automobiles in the town-town sections more and more difficult.

Record Receipts and Corresponding Revenue Passengers.

(The above graphs were plotted from this table)

Year	Day			Receipts	Rev. Pass.
1897	Thu.	June	17	$34,140.71	682,814
1898	Sat.	Sept.	3	35,908.77	718,175
1899	Sat.	Oct.	14	42,428.12	848,562
1900	Mon.	Dec.	24	39,512.93	790,258
1901	Mon.	June	17	41,191.09	823,821
1902	Tue.	June	17	41,917.91	838,358
1903	Fri.	July	3	42,177.80	843,556
1904	Tue.	Aug.	16	52,177.99	1,043,559
1905	Sat.	Dec.	23	51,229.08	1,024,581
1906	Mon.	Dec.	24	50,754.05	1,015,081
1907	Sat.	Aug.	3	51,905.89	1,038,117
1908	Thu.	Dec.	24	50,477.91	1,010,698
1909	Fri.	Dec.	24	54,860.43	1,098,321
1910	Sat.	Dec.	24	56,229.77	1,125,867
1911	Sat.	Dec.	23	61,491.69	1,230,914
1912	Sat.	Dec.	21	59,127.49	1,182,987
1913	Wed.	Dec.	24	62,933.50	1,259,413
1914	Thu.	Dec.	24	63,137.77	1,263,470
1915	Fri.	Dec.	24	68,533.96	1,371,509
1916	Sat.	Dec.	23	75,668.28	1,544,027
1917	Mon.	Dec.	21	71,364.90	1,428,457
1918	Sat.	Dec.	21	91,504.76	1,143,809
1919	Sat.	Dec.	20	119,254.52	1,200,386
1920	Fri.	Dec.	24	119,425.47	1,203,081
1921	Sat.	Dec.	24	119,549.34	1,305,508
1922	Sat.	Dec.	23	124,718.01	1,416,394
1923	Sat.	Mar.	17	122,730.21	1,388,297
1924	Sat.	Dec.	20	126,558.44	1,360,086
1925	Thu.	Dec.	24	127,264.45	1,363,302
1926	Sat.	Dec.	11	130,036.31	1,391,046
1927	Sat.	Dec.	17	125,303.98	1,335,470
1928	Sat.	Dec.	22	122,433.52	1,308,927
1929	Mon.	Dec.	23	120,139.04	1,281,194

CHANGES IN THE RESERVE FUND

Fiscal Year 1928-29
July 1, 1928, $1,000,000

July	$331,329.58*	Jan.	$74,244.54†
Aug.	398,356.82*	Feb.	53,235.38*
Sept.	204,840.30*	Mar.	245,409.29†
Oct.	3,135.31†	Apr.	140,661.08†
Nov.	2,583.64†	May	148,719.82†
Dec.	225,043.06†	June	32,187.99*

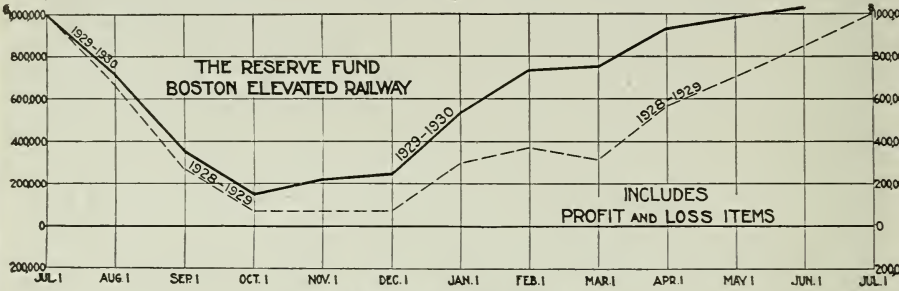
Profit and loss credit........$180,153.33

†Excess of revenue over cost of service.

Fiscal Year 1929-30
July 1, 1929, $1,000,000

July	$285,903.19*	Jan.	$195,210.33†
Aug.	361,650.56*	Feb.	18,035.80†
Sept.	197,825.11*	Mar.	178,957.43†
Oct.	64,866.77†	Apr.	54,282.43†
Nov.	64,148.53†	May	45,824.02†
Dec.	286,824.84†		

*Excess of cost of service over revenue.



MAY OPERATION

	1930	1929
GENERAL FINANCIAL DATA		
Revenue exceeded cost of service	$45,824.02	$148,719.82
Operating revenue per car-hour (A.E.R.A. std.)	$5.84	$6.26
Operating revenue per car-mile operated	58.47c	62.29c
Average fare per revenue passenger	9.278c	9.283c
Ratio operating expense to operating revenue	69.01%	65.82%
PASSENGERS CARRIED		
Revenue passengers	29,601,363	30,762,697
Per cent 5c, 6¼c and 7c passengers	18.36%	18.37%
Revenue passengers per car-mile operated	6.126	6.433
OPERATING FACTS		
Trips operated	644,419	625,851
Car-miles operated:		
Rapid-transit lines	1,341,509	1,379,510
Surface, two-man	1,103,646	1,303,070
Surface, one-man	1,713,538	1,480,945
Advertising cars	36	1,035
Motor bus	672,992	617,237
Total miles operated	4,831,721	4,781,797
ACCIDENT DATA		
Accidents per 10,000 car-miles	1.47*	1.64*
Accidents per 10,000 bus-miles	1.57*	1.54*
Revenue passengers carried per accident	21,350	21,100
Average number of witnesses per accident	3.04	4.03
COMPLAINTS AND DEFECTS		
Complaints in regard to car service	16	21
Employees complained of by car riders	73	104
Car defects reported per 10,000 car-miles	3.1	3.9
INFORMATION ABOUT POWER		
D.c. kw.hr. output gross for month	17,498,700	17,665,930
Maximum kw. load	65,800	68,200
Tons of coal consumed for power	13,422	14,325
Lbs. of coal for power per d.c.kw-hr. at cars	1.722	1.821
Operating and maintenance cost of power, including depreciation:		
Per d.c.kw.-hr. for car service	1.026c	1.006c
Per revenue car-mile	3.951c	3.888c
Kw.-hr. per revenue car-mile	3.849	3.866

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*Does not include miscellaneous accidents or derailments.

June 20, 1930 EDWARD DANA, *General Manager.*

BOSTON ELEVATED RAILWAY

CO-OPERATION

Volume 9 JULY, 1930 Number 7

Places People Like to Visit

Photo by Dadmun

THE ARSENAL AT WATERTOWN

(See page 122)

To All "El" Employees

THE Boston Elevated Railway is in the business of selling car rides to its patrons or customers. Due to the widespread use of the automobile, our business has not increased with the population as it otherwise would have done. In fact, it has just about held its own over a period of years.

While the automobile has held down our business, for the time being, it would be foolish for us to deplore this great development. The automobile is of great benefit to us all. And when used in its proper sphere it is not necessarily a formidable competitor of the electric railway in large cities. In time the present competition will be reduced, as automobile owners learn to use their machines more nearly in accord with the laws of economics.

We must acknowledge, however, that for the present there is keen competition in the transportation field. The only way to meet it is to give railway and bus service so attractive that more people will buy it in preference to furnishing their own transportation.

A local store advertised recently: "We have nothing to sell, but we hope you will buy." This probably meant that the goods would not be urged upon the customer, but would be depended upon to sell themselves. In the dictionary sense selling is simply transferring goods (or in our case services) for a consideration. The merchant cited has goods to sell, in this sense, just as the Railway has rides to sell.

The merchant's problem, and ours, however, is to furnish goods or services so well worth the price that no urging will be needed to "move them." Every "El" employee can have a hand in doing this for the Railway.

Edward Dana

BOSTON ELEVATED RAILWAY

CO-OPERATION

VOL. 9 JULY, 1930 NO. 7

TRUCK-SHOP FACILITIES IMPROVED

Following the Fire of Feb. 13 and 14, this Shop was Promptly Rehabilitated. It Was in Service Again in Less than a Month. Some Interesting Features of the Shop Are Covered in this Article

THE reconstructed truck shop at Albany street is a great improvement over the one partly destroyed by fire a few months ago. The Railway management embraced the opportunity to make some needed improvements, principally to improve the lighting. The story of the fire and the subsequent building reconstruction was given in the issue of "Co-operation," for March, 1930. Some general information about the shop was furnished in connection with an article on "The Blacksmith," in the issue for March, 1927.

Since 1927 several new machine tools and processes have been introduced in this shop. The following information regarding these and other facts supplementing the previous articles will be of interest to all employees.

ADDITIONAL STRUCTURAL DETAILS

The March, 1930, article covered the building reconstruction to that time. As mentioned on page 46 of that issue, the third floor of the front building was condemned by the Building Department of the City. This was formerly occupied by the engineering staff of the department of power. The third floor has now been removed and a new roof provided. The second floor, which extends over the office section and the front part of the main truck shop, is used for light work and storage.

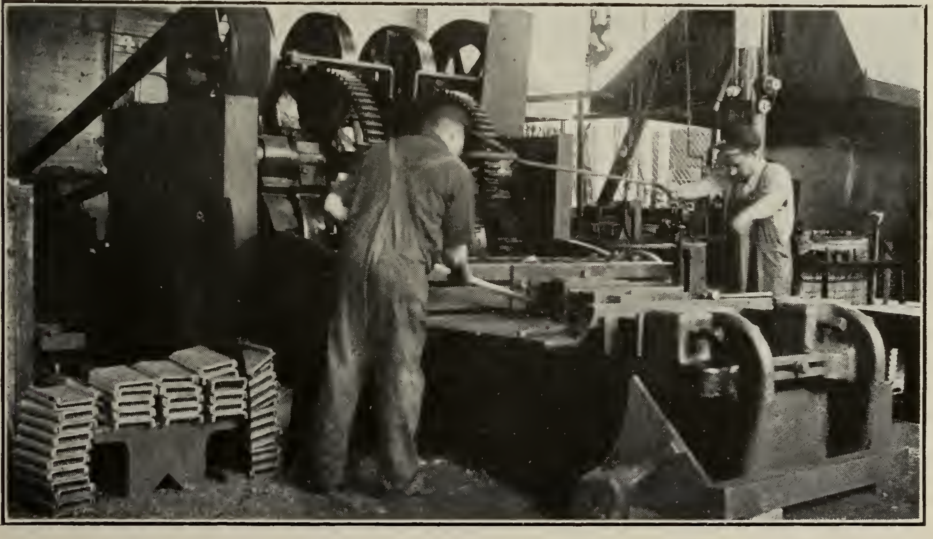
The long skylight over the main shop, described and illustrated in the previous article, has been painted white to reduce glare and heat.

Plans are being prepared for a sprinkler system for the shop, also.

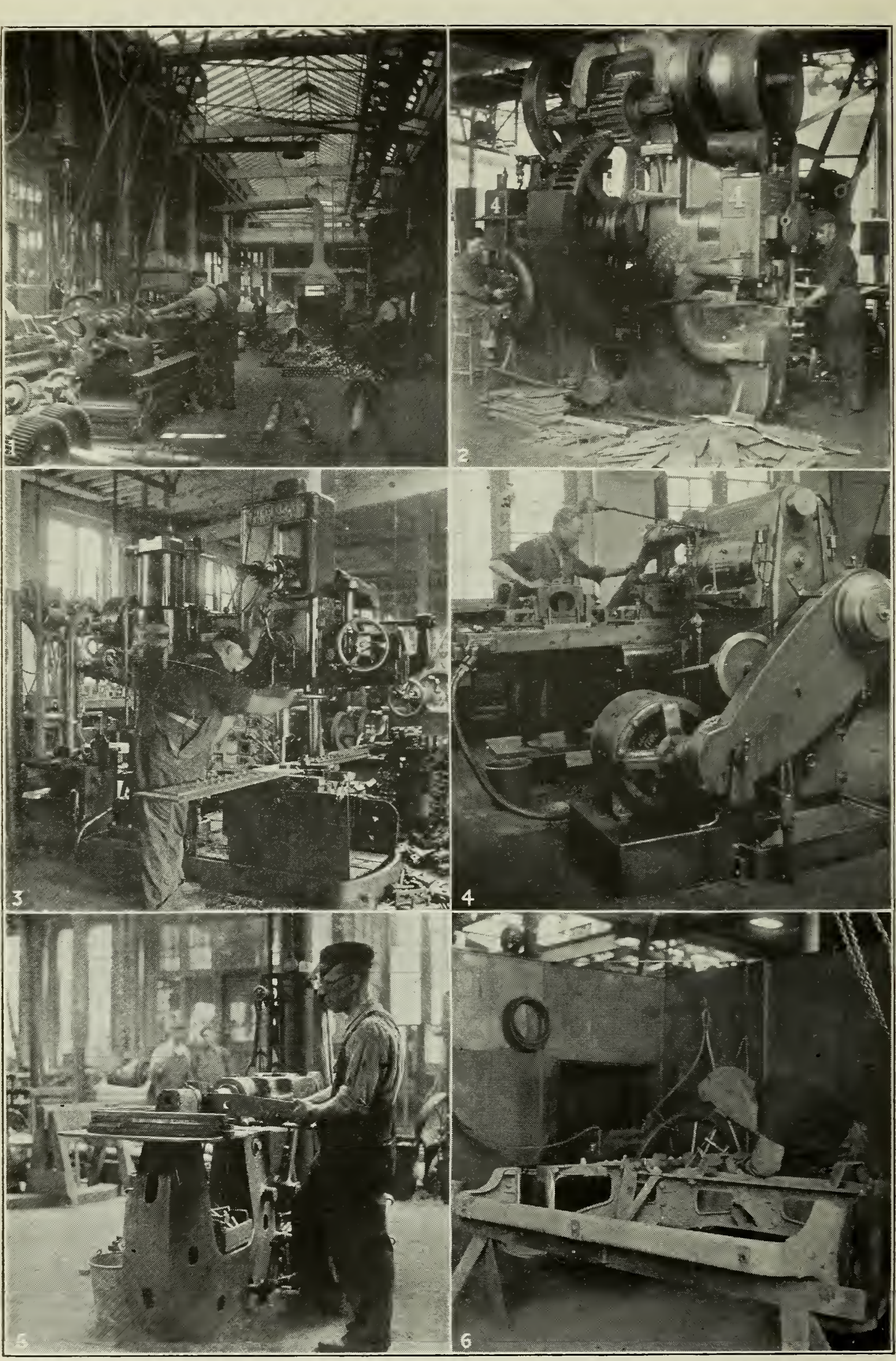
Since the rehabilitation, the machine tools have been freshly painted, so that with the bright interior and the fresh-looking tools, there is a cheery atmosphere about the place.

SOME OF THE MORE PROMINENT TOOLS

Let us examine a few of the items which would impress a visitor going



POWERFUL BULLDOZER USED FOR PRESSING AND BENDING



VIEWS IN THE TRUCK SHOP

1, general view, showing lighting. 2, combined shear and punch press. 3, radial drill. 4, milling machine. 5, rivetting machine used for pressing. 6, portable welder in use on truck repairs.

through the shop and which are of recent installation.

First, there is the 50-ton Hanna riveting machine installed in January, 1928, which is giving very satisfactory results. It is used to press out worn bushings and to press in new bushings in truck levers, brake-shoe hangers, brake-shoe heads and other truck parts which require bushing. The work of bushing this material was formerly done by two men, one striking with sledge hammer and one holding a "set," such as is used for bushing work. A better job is now done by one man in much less time. Cold bending of light material that would otherwise have to be done by hand by a blacksmith and his helper is now done on the Hanna machine.

A 4-foot Cincinnati Bickford super radial drill was installed in the truck shop in February, 1928, and has proved very effective. It is able to do the work of drilling, boring, counterboring and tapping much faster than the older types of radial drills, is easier to operate and does all of the heavy drilling without breakdowns or other failures.

The head of this machine can be moved along the arm by means of a head-moving hand-wheel, or by means of the power rapid-traverse lever. The arm of the drill, also, is raised or lowered by power. This drill has thirty-six spindle speeds. One speed-change lever provides nine changes of speed, and two back-gear levers each provide two changes of speed. The nine speeds obtained through the speed-change lever when multiplied by the four speeds obtained through the back-gear levers gives the total of thirty-six spindle speeds.

This super-service radial has eighteen feeds. One feed lever provides nine changes of feed. This number is doubled by a second feed lever, making the total of eighteen feeds.

The feed mechanism also includes a dial depth gage of the compensating type. This gage automatically disengages the feed when either the point or the body of the drill has penetrated to a required depth.

The drill is also equipped with a "Coolant system," a pump being located on the rear of the arm near the column to insure an abundant supply of cool cutting compound on the drill while cutting.

All of the mechanism of this drill is completely enclosed; the gears all run in oil and the drill is provided with every practical accident-prevention feature.

Another interesting machine is a 300-ton hydraulic wheel press. The work which it does is mostly pressing on wheels and gears on axles. The machine is equipped with a hydraulagraph recording gage and hydraulic check gage. It carries a 10-horsepower motor to drive the hydraulic pump.

In the shop is a 500-ton hydraulic wheel press, also. It is used mostly for pressing off worn wheels and gears from wheel sets sent in from car houses, as well as pressing out worn or broken armature shafts. Work is done for other departments of the road on this press where it is too heavy for them to

(Please turn to page 124)

FORGING MACHINE WITH OIL FURNACE AT RIGHT

Use the "EL" to and from
FRANKLIN PARK
THE BEACHES
OLD STATE HOUSE
BUNKER HILL
BOSTON'S BEAUTY SPOTS and HISTORICAL POINTS

A NEW CLERESTORY CARD

"EL" NEWS NOTES

Items of Interest Regarding Recent Incidents With Which All Employees Should Be Familiar

GOVERNOR SQUARE EXTENSION STARTED

AN important event in the history of local transit development was the inauguration of the subway extension at Governor square, on Monday, July 21. This will eliminate traffic congestion at this now highly congested point, as far as railway traffic is concerned. It will provide a more efficient connecting transit link between Boston and Brookline and Newton. Mayor Curley, his son, George, Capt. Thos. Sullivan, "El" trustees Whiting and E. A. Johnson, and others, took part in the informal ceremonies which celebrated the beginning of actual construction.

POLE-BAND COLOR CHANGES

A CHANGE has been made in the colors used to indicate near-side stopping places. An orange band now indicates the far-side stop, or a stop with the entrance door near the pole, the same as the white band which was used until recently. A white band on the orange band indicates the near-side stop or a stop with the entrance door near the pole, the same as the white-and-red band, which has been used until recently.

L STREET BRIDGE PLANS

THE partly destroyed L street bridge will be repaired and widened in conjunction with the widening of Summer street.

The construction work, which is expected to extend over a period of five months, will be financed by the bond issue of $1,100,000 authorized by the Legislature for the widening of Summer and L streets.

The old draw will not be replaced and the only construction work necessary upon the section of the bridge unharmed by the fire will be the addition of 10 feet to its width. The new bridge construction will be 70 feet wide to conform with widened Summer street.

EXTRA SERVICES

THIS year the tercentenary celebrations, in addition to the usual holidays, are requiring much extra service by the "El." For the bonfire at the Sullivan square playground, on the evening of June 16, special service was furnished, and also for the parade in Charlestown on June 17. A considerable re-arrangement of service was required in connection with the tercentenary parade in Cambridge on June 25. Extra late service was given before July 4 to various sections of the territory.

NEW R. T. L. STATION

CONSTRUCTION of a new station at or near the junction of Cambridge and Charles streets on the Cambridge-Dorchester rapid transit was approved by the trustees on June 20. The new station is estimated to cost at about $375,000. Authority for this improvement is contained in an act passed by the Legislature and approved on June 2, 1924. The project has been approved also by the Department of Public Utilities and the board of directors of the company.

For many years Dr. Frederic A. Washburn, director of the Massachusetts General Hospital and the Eye and Ear Infirmary, has sought this improvement. He has pointed out that the average number of people going in and out of these institutions is about 10,000 persons a day, in addition to the large staff of

(*Please turn to page 123*)

TWENTY-FIVE YEARS OF SERVICE NOW ENTITLE EMPLOYEES TO EMBLEMS

ABOUT two years ago the management of the Boston Elevated Railway began the practice of awarding long-service emblems to employees. Beginning with emblems for the longest service, corresponding emblems for shorter terms of service have since been awarded, until now all employees who have served 25 years or more have received them. Lists of new awards, totaling 650, are given below, and the totals awarded to date are as follows: 50-year pins, 16 active, 6 pensioned or deceased; 45-year pins, 51 active, 17 pensioned or deceased; 40-year pins, 115 active, 22 pensioned or deceased; 35-year pins, 212 active, 28 pensioned or deceased; 30-year pins, 578 active, 3 pensioned or deceased; 25-year pins, 504 active, 0 pensioned or deceased. Grand total of emblems awarded to date, 1,552.

25-Year Emblems Awarded

BUREAU OF AUDIT

Miss E. M. Dunican, Clerk.
C. W. Hamilton, Clerk.
C. C. Wright, Pay-roll clerk.

GENERAL MANAGER'S OFFICE

Miss G. E. Tetlow, Stenographer.

LEGAL DEPARTMENT

William E. Keefe, Investigator.
Frank J. Kelter, Investigator.
Charles M. Macdonald, Adjuster.
Henry T. Pease, Investigator.
Russell A. Sears, General attorney.
John P. Shea, Claim agent.
Maurice P. Spillane, Attorney.

MAINTENANCE DEPARTMENT

R. W. Allen, Inspector.
J. L. Baker, Wireman.
W. H. Barnes, Asst. eng. surface lines.
J. Bartlett, Sub-foreman.
A. L. Butler, Engineer, Rapid Transit Lines.
J. F. Callahan, Sub-foreman.
E. A. Carpenter, Draftsman.
G. Chosse, Trackman.
J. Connelly, Arc repairman.
M. J. Connors, Drawbridge operator.
J. Cunningham, Machinist.
W. J. Curley, Sub-foreman.
J. Curren, Paver.
A. I. Davis, Asst. engineer.
P. J. Dinsmore, Wireman.
P. Falvey, Track cleaner.
L. B. Favor, Foreman.
T. E. Fitzpatrick, Foreman.
D. T. Flynn, Freight clerk.
W. H. Foss, Wireman.
A. Gatta, trackman.
J. Gibbons, Arc repairman.
P. Gill, Attendant.
C. A. Godwin, Wireman.
George Hamilton, Foreman.
D. Hennigan, Foreman.
Daniel Hayes, Truck driver.
W. J. Houlihan, Wireman.
J. Howard, Clerk.
R. K. Jenner, Station repairman.
L. D. Jones, Machinist.
P. Keaney, Track repairman.
V. Lauro, Trackman.
J. E. Lee, Foreman.
E. L. Lockman, Asst. to supt.

LONG-SERVICE EMBLEM

The 25-year emblem is like the above except that the ground is white and there are only five stars.

W. M. Lowe, Storekeeper.
G. W. Mason, Clerk.
P. McDonough, Paver.
M. McHugh, Station repairman.
J. Moreau, Watchman.
V. Mustrangelo, Trackman.
P. T. O'Brien, Foreman.
B. O'Rourke, Paver.
H. Orpen, Plumber.
P. L. Perron, Supvr. building maint.
G. A. Peterson, Foreman.
W. H. Potterton, Wireman.
D. Rainey, Attendant.
T. J. Reilly, Foreman.
L. J. Riley, Wireman.
L. Roddy, Mason.
G. Rose, Wireman.
A. Russo, Trackman.
P. F. Ryan, Wireman.
F. R. R. Shattuck, Foreman.
D. J. Shea, Station repairman.
A. E. Sherman, Wireman.
A. L. Short, Signal supervisor.
A. Smith, Roofer.
H. M. Steward, Superintendent of maintenance.
J. Wren, Trackmaster.

POWER DEPARTMENT

Edmond Browne, Hoisting engineer.
Daniel Donohue, Head lineman.
Edward L. Doyle, Asst. engineer.
Samuel Farr, Chief engineer.
Richmond C. Farwell, System operator.
Philip D. Gambell, Elec. supervisor.
Patrick Gill, Head lineman.
Joseph A. Howard, Asst. to supt.
Perley W. Kimpton, Asst. chief engineer.
Peter J. Manning, Head lineman.
James D. Reynolds Oiler.
Edgar L. Stackpole, Act. chief engineer.

PURCHASING DEPARTMENT

Edward Mahler, Purchasing agent.
J. G. Stone, Asst. purchasing agent.

ROLLING STOCK & SHOPS DEPARTMENT

A. Arneson, Machinist, machine shop.
C. F. Barnes, Repairman, Sullivan Sq.
J. J. Brennan, Painter, Everett.
R. F. Cashman, Foreman, Forest Hills.
W. F. Cassely, Brass worker, Everett.
W. W. Chapman, Foreman, Everett
J. K. Corr, Piper, Everett.
J. Coughlin, Repairman, Lotus Place.
J. J. Crowley, Carpenter, Everett.
M. F. Cummings, Machinist, machine shop.
A. C. Daunbaur, Car cleaner, Lotus Place.
C. L. Davis, Service car man, yard crew.
F. V. Ditmar, Painter, Everett.
J. J. Donahue, Repairman, North Cambridge.
J. T. Donahue, Machinist, Sullivan Sq.
H. B. Downs, General foreman, R. T. L.
G. W. P. Dowsing, Shifter, Clarendon Hill.
P. J. Driscoll, Car cleaner, Forest Hil's.
T. J. Flanagan, Repairman, Salem St.
D. J. Flynn, Foreman, Eliot Sq.
J. Gallant, Foreman, East Boston.

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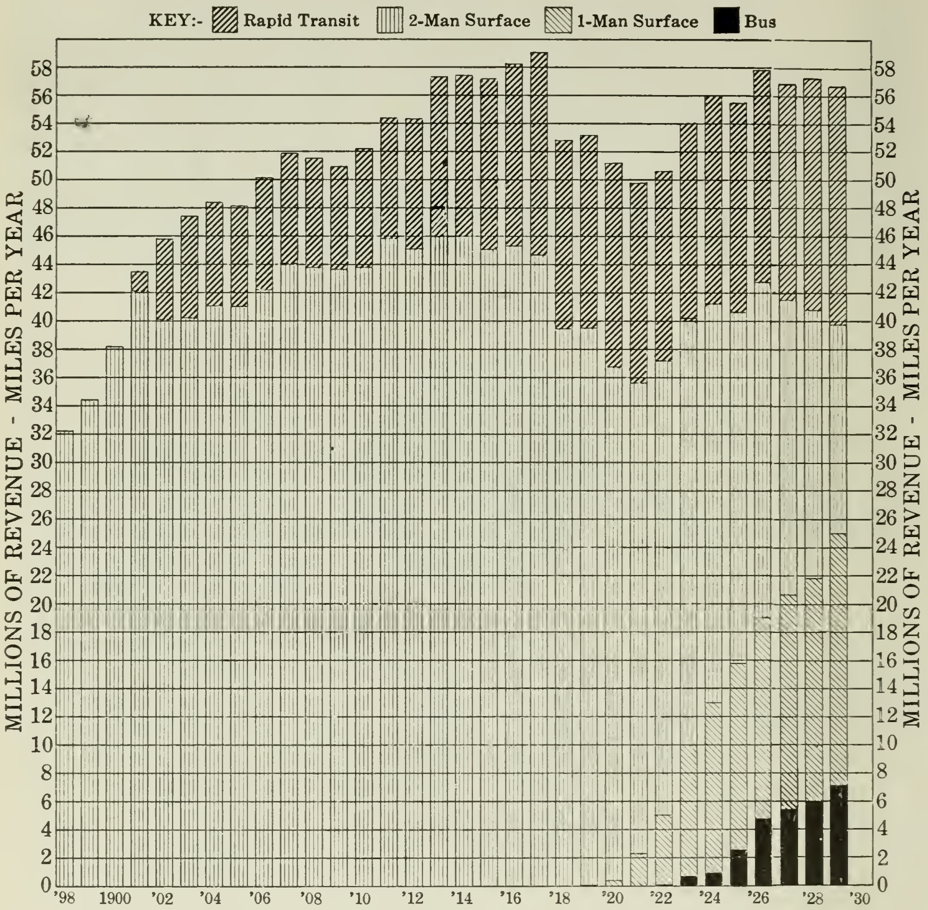

ANNUAL "EL" MILEAGE AND HOW IT IS PRODUCED

How Can We Improve the Service?

Suggestions by employees for improvement of service are always appreciated.

Write the General Manager whenever you have an idea which, after careful thought and consideration from every angle, you believe would be helpful and he will give it his personal consideration.

(*Continued from page 119*)

W. Gardner, Field coil insulater, armature shop.
P. J. Glynn, Repairman, Bennett St.
W. J. Harrington, Field coil insulater armature shop.
A. W. Hookway, Foreman, brass foundry.
F. A. Hugal, Carpenter, Everett.
D. B. Keith, Armature winder.
J. J. Kelley, Repairman, Reservoir.
W. F. Landrigan, Repairman, Albany St. Garage.
M. Law, Repairman, North Cambridge.
F. J. Long, Sub-foreman painter, Everett.
W. M. Lynch, Mach. spec., truck shop.
J. E. McConnell, foreman, Salem St.
J. J. McDermott, Painter, Everett.
C. T. McGillen, Repairman, Park St.
J. J. McHale, Motor assembler, Sullivan Sq.
W. A. McKenzie, Painter, Everett.
W. W. McKay, Machinist, truck shop.
T. McNab, Night foreman, Sullivan Sq.
Miss E. M. McNamara, Forewoman, armature shop.
J. J. Mearls, Carpenter, Everett.
T. F. Morrissey, Repairman, Jamaica Plain.
M. T. Murphy, Repairman, Sullivan Sq.
J. J. Murray, Repairman, Milton
E. Nestor, Repairman, Forest Hills.
J. F. O'Donnell, Foreman, Charlestown Neck.
E. O'Rourke, Machinist, machine shop.
J. J. Owens, Carpenter, Everett.
D. Palmieri, General helper, Everett.
P. G. Porter, Foreman, Sullivan Sq.
M. N. Preeper, Repairman, Bennett St.
F. M. Rosamond, Machine spec., truck shop.
P. L. Rourke, Stockman, Everett.
P. A. Ruck, Asst. foreman, Sullivan Sq.
J. H. Rudge, Armature winder, Sullivan Sq.
J. N. Shone, Repairman, Forest Hills.
B. B. Sloan, Chief clerk, storeroom.
J. J. Smithwick, Repairman, Salem St.
S. B. Smyth, Chief clerk.
P. J. Spellman, Yardman, yard crew.
T. F. Sullivan, Repairman, Sullivan Sq.
P. Sullivan, Repairman, Sullivan Sq.
A. J. Supple, Mach. spec., machine shop.
W. H. Wachter, Painter, Everett.
A. E. Walsh, Blks. helper, Everett.
X. Walsh, Machinist, machine shop.

TRANSPORTATION DEPARTMENT

Robert Miller, Chauffeur.

Timetable Division

Miss Alice M. James, Clerk.

Safety Division

Joseph A. Schwendeman, Inspector.
John H. Weafer, Supervisor.

Employment and Training Division

Alfred J. Guyon, Asst. superintendent.
Henry C. Olive, Clerk.
Thomas F. Shine, Instructor.

Rapid-Transit Division

Roy E. Adams, Motorman.
James W. Baillie, Inspector.
Frederick W. Beal, Yardmaster.
Ernest L. Beatham, Motorman.
George Bennett, Warder.
Ellsworth O. Bisbee, Gateman.
Sidney E. Bishop, Porter.
Henry S. Blandford, Guard.
Albert P. Brintnall, Guard.
Robert H. Buxton, Towerman.
Carlyle M. Carpenter, Yardmaster.
John F. Carron, Guard.
Charles E. Carter, Motorman.
Felix A. Clancy, Motorman.
Pierce B. Clark, Motorman.
Martin J. Coan, Gateman.
Edward C. Conlan, Guard.
Clarence Cook, Guard.
Leonard D. Dodge, Towerman.
Michael J. Donahue, Motorman.
George J. Donnelly, Motorman.
Balson H. Doorian, Guard.
Godfrey Duffell, Guard.
Joseph A. Dugas, Guard.
Greenleaf P. Durgin, Platform starter.
A. D. Edmands, Jr., Motorman.
Michael F. Fallon, Motorman.
Joseph T. Farry, Motorman.
Thomas F. Flynn, Motorman.
Herbert J. Foster, Motorman.
Samuel S. Francis, Motorman.
Wilburn L. Fraser, Guard.
Fred F. Garlick, Motorman.
Anthony George, Motorman.
Robert Gordon, Platform starter.
Sidney C. Grant, Motorman.
Harry L. Griffin, Inspector.
George W. Griswold, Motorman.
Harry W. Hayes, Guard.
John H. Hayes, Motorman.
Timothy J. Hennessy, Motorman.
Alfred E. Horton, Motorman.
Louis L. Hunt, Towerman.
Bernard F. Johnson, Motorman.
William H. Johnson, Train starter.
John Kilduff, Motorman.
Henry M. King, Motorman.
Boris Kupsenal, Motorman.
William C. Lally, Motorman.
Patrick J. Larkin, Guard.
Terrence Mann, Guard.
William F. McAchorn, Motorman.
Kenneth D. McIver, Platform starter.
James C. Melville, Towerman.
Thomas Moran, Gateman.
Michael A. Murphy, Towerman.
Thomas W. Murphy, Towerman.
William P, Murphy, Guard.
Michael Murray, Gateman.
Joseph P. Neville, Platform starter.
Caleb S. Newell, Motorman.
Stephen J. O'Brien, Platform starter.
William J. O'Hara, Guard.
Albert J. O'Keefe, Towerman.
Frederick H. Orr, Chief train dispatcher.
Roderick J. Owens, Motorman.
Thomas M. Phelps, Motorman.
Patrick J. Queeney, Guard.
Percy R. Redden, Motorman.
James Reid, Guard.
George E. Robinson, Porter.
Eugene E. Samson, Guard.
James Shanks, Jr., Guard.
Harry R. Shaw, Gateman.
Michael P. Shea, Motorman.
Michael Sheehan, Motorman.
R. Shutzman, Guard.
Frederick R. Silliker, Train Starter.
William T. Smeedy, Guard.
Allen T. Smiley, Train Dispatcher.
Frederick R. Smith, Motorman.
John D. Smith, Warder.
Patrick L. Strapp, Motorman.
Michael Sullivan, Motorman.
Frank Tamlyn, Motorman.
Edward M. Thurlow, Motorman.
Morey W. Tripp, Motorman.
Alonzo Van Hise, Porter.
Charles A. Verrill, Guard.
Charles M. Waelde, Platform Starter.
Jeremiah Walsh, Motorman.
William F. Wardrope, Train dispatcher.
Frederick N. Weeks, Inspector.
William J. White, Motorman.
John N. Zimmer, Motorman.

Division 1

Robert A. Andrews, Conductor.
John G. Avery, Conductor.
Charles W. Babb, Conductor.
John A. Boyle, Conductor.
William H. Davis, Motorman.
Lawrence R. Donahue, Motorman.
Patrick J. Donovan, Motorman.
Martin M. Foley, Janitor.
Joseph M. Gallant, Conductor.
William Galvin, Motorman.
Michael Hall, Motorman.
David Haskell, Conductor.
Patrick G. Hession, Motorman.
Thomas Hughes, Motorman.
James T. Johnstone, Motorman.
Alfred E. Jordan, Motorman.
Thomas Jordan, Conductor.
William W. Kaufman, Conductor.
Augustine Keefe, Motorman.
Duncan A. Macuspic. Starter.
William J. Malone, Motorman.
William H. McCarthy, Motorman.
James J. McDonnell, Conductor.

(*Please turn to page 125*)

A TEN-YEAR COMPARISON

	1920	1929	Increase	Decrease
Revenue passengers, 5c fare	8,952,577	8,984,669	32,092	
Revenue passengers, 6c and 6¼c fare		56,272,366	56,272,366	
Revenue passengers, 10c fare	326,496,184	288,789,514		37,706,670
Special car and bus passengers	77,800	168,441	90,641	
Total	335,526,561	354,214,990	18,688,429	
Average fare per rev. pass.	9.868c	9.279c		0.589c
Wages—Amal. and Craft Employees	$14,040,747	*$18,265,830	$4,225,083	
Actual total wage cost †	$17,216,445	$16,093,870		$1,122,575
Average employees on payroll	9,628	8,077		1,551
Gross revenue	$34,031,636	$34,096,623	$64,987	
Fixed charges (taxes, rent of leased roads, dividends, subway and tunnel rents, interest on bonds and notes) and miscellaneous items	$8,609,681	$9,977,803	$1,368,122	
Operating expenses	$25,769,122	$24,024,747		$1,744,375
Ratio of operating expenses to gross revenue	75.721%	70.46%		5.261%
Revenue mileage	51,237,527	56,684,985	5,447,458	
Round trips operated	5,764,347	7,361,738	1,597,391	
Car defects per 10,000 car-miles	13.4	4.075		9.325
Revenue passenger per mile	6.548	6.249		0.299
20-minute delays in service	885	449		436

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*Determined by application of Dec. 31, 1929, rates to number of men and schedule hours of 1920.

†Operating expense only.

If operating expenses in 1929 had taken the same percentage of gross revenue as in 1920, they would have been greater by $1,793,557, and there would have been a deficit for the year of $1,699,484.

A TEN-YEAR COMPARISON

THE above table gives at a glance the principal operating data of the Railway over a period long enough to show general trends. During this period there was an increase in revenue passengers carried of 18,688,429, or 5.57 per cent, while the average rate of fare was reduced by 0.589 per cent, or practically 6 per cent.

While the total actual wage cost has been reduced by $1,122,575, or 6.5 per cent, the average wage per employee has increased from $1,787 to $1,968, or 10 per cent.

The reduction in average rate of fare has been just about sufficient to keep the gross revenue at the same point, namely, slightly over $34,000,000. But operating expenses have undergone a substantial reduction. Whereas the operating expenses were $25,769,122 in 1920, they were down to $24,024,747 in 1929, or 6.7 per cent. This saving, however, was largely absorbed by the increase in the fixed charges, which increased by $1,368,122, or 15.9 per cent. The economy of operation is reflected in the operating ratio, i. e., the ratio of operating expenses to gross revenue.

Along with this improvement in operating costs went an actual increase in service, as measured by mileage furnished. This increase in revenue mileage was 5,447,458, or 10.3 per cent. The increase in mileage was greater in proportion than the increase in revenue passengers, as indicated by a falling off in revenue passengers per mile of 0.299, or 4.57 per cent.

A noteworthy reduction in car defects per 10,000 miles was achieved in this 10-year period, namely, from 13.4 to 4.075, a reduction of nearly 70 per cent. Delays in service, of 20 minutes duration or more, were reduced from 885 to 449, or nearly 50 per cent.

THE COVER PICTURE

This month's cover carries a picture of part of the buildings and grounds of the Watertown Arsenal. It is located on Arsenal street, Watertown, and covers 100 acres. The government has centralized here a complete equipment of machinery devoted to the manufacture of artillery, projectiles and gun carriages. Permission to view the Arsenal can be obtained from the Commandant's office. The Arsenal is reached by way of the Cambridge subway to Central Station, thence by Watertown surface car.

"EL" NEWS NOTES

(*Continued from page 118*)

employees and nurses and other attendants, most of whom live away from the hospital. In 1929, according to Dr. Washburn, there were 267,424 persons who attended the combined out-patient departments. This number is augmented by the persons who accompany the out-patients to the hospitals.

Construction of the station is particularly desirable at this time because of the improvements that have been adopted by the city of Boston in the development of the Charlesbank at an expenditure of $1,475,000. This includes the widening of Charles street between the Longfellow and Charles River Dam bridges, the construction of traffic circles on the Boston side of the two bridges, and the expansion of the Charlesbank gymnasium and playground through the introduction of a salt-water swimming pool and other recreational facilities. The station would be above the traffic circle.

Served by this station would be a section which is rapidly developing as an apartment section.

The distance between Park street and Kendall square is 1.27 miles. This is the longest distance between stations on the Cambridge-Dorchester tunnel. Moreover, the station stop at this point would be a relatively short one. It is not believed that a station stop at Cambridge and Charles streets would seriously reduce the speed in the Cambridge-Dorchester tunnel. Moreover, there are only three stations of the Cambridge-Dorchester tunnel in the heart of Boston. Another station on this line within the heart of Boston will serve more people, and therefore has greater reason for being constructed than a station further out on the line.

Meeting House Hill Line

SINCE June 28 the Meeting-House Hill line has been operating with one-man cars. Inbound cars run pay-leave. Passengers boarding in the Fields Corner station are given transfers to identify them when leaving the car. Cars run to the prepayment area at Andrew square, discharge passengers and pull ahead to the paid area to receive boarding passengers. Outbound cars run pay-enter, except btween 7 and 9 A. M. weekdays and Saturdays, when an operator boards at Mt. Ida road on Bowdoin street and gives transfers to all passengers. From this point on the car run pay-leave.

TWO MORE EFFECTIVE DASH POSTERS

INFORMATION POCKET BOOKLETS HAVE BEEN DISTRIBUTED

ALL employees have been supplied with copies of the tercentenary edition of the guide and information folder, with a picture map of the heart of the Metropolitan District. For the benefit of employees who may be called upon to answer questions a special edition of the folder text, without illustrations, has also been issued and distributed.

ACCIDENT-PREVENTION CAMPAIGN IN MAINTENANCE DEPARTMENT

DURING the month of July, the maintenance department has been conducting a campaign to prevent accidents. Each foreman has been instructing his men daily from the standpoint of safety. During the first half of the month only two minor accidents were reported, neither involving loss of time. There were 981 men on the payroll. In 1928, with 1,548 men on the roll, there were ten lost-time accidents and fourteen no-lost-time accidents, a total of twenty-four, or 15.5 accidents per 1,000 men. In 1929, with 1,090 men on the roll, there were ten lost-time accidents and fifteen no-lost-time accidents, a total of twenty-five, or 22.93 accidents per 1,000 men.

TRUCK SHOP IMPROVED

(Concluded from page 117)

handle. This machine is equipped with a 15-horsepower motor for the hydraulic pump.

THE "WHEEL JOB"

On the "wheel job" there are two 43-inch wheel boring mills on which wheels and gears are bored. The wheels and gears are received from the manufacturers rough-bored, leaving about ¼ inch of material to bore out to fit the axles. As the wheels and gears are bought in rough bore sizes there is enough stock in the bore of the wheels to permit them to be fitted to good second-hand axles sent in from car houses. These come in to have old wheels and gears removed, and new wheels and gears bored, fitted and pressed on.

There are also four lathes on the "wheel job." Two are used for turning axles. The axles are received from the manufacturers rough-turned, leaving about ⅛ inch to finish in turning gear and wheels seats, and turning and rolling motor and journal bearing.

The third lathe is used for inspection of axles after wheels are pressed off, to see that they are straight, that there are no cracks starting in fillets or other parts of the axles, and that journals are not worn down too much to permit their being put back into service. The fourth lathe is used for straightening axles that have been sprung in service.

WELDING

The portable welding machine in the truck shop is installed in a sheet-steel welding booth, large enough to take in a truck frame. The frames are brought here to have cracked transom bars, cracked side-frames or cracked pedestals welded up. While a truck frame is in the welding booth, all loose rivets and bolts are burnt off. Worn steel castings are built up without removal from the truck frame. All worn holes in the truck frames are welded up and redrilled, with great savings in time, labor and material over older methods.

In March, 1929, a dual welding machine was installed in this shop in a sheet-steel welding booth large enough to accommodate two electric welders. Most of the work done by the dual welder is the repairing of sheet-steel gear casings, building up of worn steel castings, welding of bolts into pedestal wear-plates, welding of bushings in swing links, building up of steel journal boxes, welding of case-hardened wear-plates on pedestal ways of journal boxes, and many miscellaneous jobs for garages and for other departments.

CASE-HARDENED JOURNAL-BOX WEAR-PLATES

A No. 5 Cincinnati milling machine was installed in the shop in February, 1929. Most of the work done on this machine is the milling of worn journal boxes. The journal boxes are taken out of service on account of wear in the pedestal ways. Most of the journal boxes have to be built up somewhat by electric welding and then they are milled down so that the wear-plates will have a bearing.

After a box has been milled, a sheet-steel wear-plate, well case-hardened, is clamped into the pedestal way of the journal box. The boxes are then sent to the welding room, where the wear-plates are welded to them. This means of reclaiming the worn journal boxes is a great improvement over the old method by which the pedestal ways of the journal boxes were built up, leaving enough metal on them to mill down to fit the pedestals of the trucks.

The journal boxes with case-hardened wear-plates should give much longer service than the boxes built up by electric welding and milled down to size. When the case-hardened wear-plates do show wear, they can be easily removed and new plate welded into the boxes.

(*Continued from page 121*)

Donald B. McKay, Conductor.
Matthew J. McLaughlin, Motorman.
Timothy J. McMahon, Motorman.
Alex McNabb, Motorman.
Kenneth C. Miller, Starter.
William J. Morrissey, Motorman.
Cornelius Murphy, Motorman.
John T. O'Halloran, Motorman.
Charles H. Olsen, Motorman.
William W. Pearson, Conductor.
Francis P. Powell, Starter.
Henry L. Puttner, Motorman.
Charles H. Redman, Conductor.
John L. Regan, Motorman.
Charles N. Ross, Conductor.
David A. Sarty, Conductor.
Thomas E. Sharpe, Motorman.
Peter A. Shea, Motorman.
Otis F. Smith, Motorman.
Philip J. Smith, Motorman.
Philip S. Thompson, Motorman.
Ernest L. Verrill, Motorman.
Frank E. Walsh, Conductor.
John Walsh, Motorman.
Leroy A. Whitney, Conductor.
Edward Wilson, Motorman.

Division 2

John A. Arthur, Starter.
Guy C. Bean, Conductor
Herbert L. Billings, Starter.
William J. Brown, Operator.
John J. Bulger, Conductor
George J. Bulley, Operator.
John J. Concannon, Operator.
Joseph F. Cooney, Operator.
Martin F. Costello, Operator.
John J. D'Arcy, Operator.
Charles B. Davis, Operator.
John E. Doherty, Operator.
Patrick J. Donahue, Operator.
Michael Dorgan, Conductor.
Samuel H. Dorr, Operator.
James Dunn, Motorman.
Andrew Erickson, Conductor.
Axel F. Evans, Motorman.
William A. Ewell, Motorman.
James Fahey, Operator.
William Ferguson, Motorman.
Edward S. Fisher, Starter.
Thomas J. Fitzgerald, Motorman.
Michael Garrity, Operator.
Jeremiah J. Geary, Starter.
George W. Gilman, Operator.
Patrick J. Glynn, Operator.
Arthur C. Hayes, Conductor.
Thaddeus Howell, Conductor.
Robert E. Hurd, Operator.
Thomas Kelly, Operator.
Bernard A. Kennedy, Operator.
Edward J. Kennedy, Conductor.
Michael J. Lang, Operator.
Michael J. Leonard, Operator.
Patrick J. Linden, Operator.
Andrew A. Madden, Conductor.
Michael J. Mahon, Conductor.
John J. McDonald, Operator.
Michael McGary, Conductor.
Daniel F. McGrath, Operator.
Thomas L. McGuiggan, Motorman.
Angus McKenzie, Operator.
Patrick McNiff, Conductor.
Thomas F. Moore, Operator.
John B. Nelson, Operator.
John J. Normile, Motorman.
Thomas J. Norton, Operator.
John A. Peterson, Operator.
George W. Pottle, Operator.
John P. Regan, Operator.
Geo. C. Richardson, Conductor.
Thaddeus Rock, Conductor.
Loran J. Sanford, Operator.
John E. Sexton, Operator.
William S. Smith, Conductor.
Daniel F. Sullivan, Conductor.
Daniel J. Sullivan, Operator.
Martin Thyne, Operator.
Howard G. Titus, Operator.
Clark W. Tuttle, Conductor.
James J. Twohig, Operator.
Thomas H. Walsh, Operator.
Albert U. Warren, Operator.
Maurice J. Welsh, Operator.
James W. Wentzell, Operator.
Ira A. Willard, Motorman.

Division 3

Peter C. Anderson, Operator.
Frank S. Berry, Starter.
Charles S. L. Brown, Motorman.
Charles L. Bruder, Operator.
Francis J. Burns, Conductor.
John J. Callan, Operator.
Patrick J. Cannon, Operator.
Albert N. Carlson, Motorman.
Cornelius Collins, Operator.
Michael J. Conroy, Starter.
Patrick F. Cronin, Operator.
Timothy Cronin, Operator.
John J. Daley, Operator.
Joseph Daly, Operator.
Patrick J. Dwyer, Operator.
Albert J. Egan, Operator.
Denis Fitzgerald, Motorman.
Martin Forbes, Motorman.
William F. Glynn, Motorman.
Michael J. Grace, Operator.
Joseph A. Griffin, Supervisor
Richard W. Griffin, Inspector.
Alfred Johnson, Operator.
Peter A. Johnson, Motorman.
Alter A. Kelley, Operator.
Patrick Keohane, Operator.
Frederick C. LaCasse, Operator.
Joseph J. Lerner, Motorman.
Thomas F. Lucas, Operator.
William E. Lutz, Operator.
Lloyd A. Mabee, Motorman.
T. J. Mannix, Operator.
John McCarthy, Operator.
William F. McCarthy, Starter.
Angus McGillivray, Operator.
John McGovern, Conductor.
Patrick J. Moran, Motorman.
Patrick O'Brien, Inspector.
Richard O'Brien, Motorman.
Andrew E. O'Malley, Operator.
Nicholas P. O'Sullivan, Conductor.
Michael M. Pomfret, Operator.
Patrick Reardon, Conductor.
Charles H. Rose, Chief Clerk.
John J. Ryan, Operator.
Michael Shannon, Operator.
John M. Shean, Operator.
Ivan J. Smith, Operator.
Joseph J. Sweeney, Starter.
B. A. Toomey, Operator.
Patrick F. Toye, Operator.
William B. Villemaire, Starter.
John M. Vogel, Conductor.
Frederick A. Wallace, Conductor.
James Walsh, Motorman.
Oscar R. Wettergreen, Operator.
Harry W. Yates, Operator.

Division 4

James R. Bartlett, Operator.
Michael W. Burke, Operator.
William L. Brewer, Motorman.
Thomas J. Broderick, Operator.
Michael J. Canniffe, Starter.
William A. Carberry, Operator.
James Carew, Operator.
Henry L. Carter, Operator.
Charles Clark, Operator.
James Cosgrove, Operator.
Dennis E. Cummings, Operator.
Charles H. Daley, Starter.
William Daly, Operator.
Michael J. Doody, Operator.
Thomas Downey, Operator.
Thomas P. Driscoll, Operator.
Samuel R. Everett, Inspector.
Michael F. Fahey, Operator.
Raymond A. Farr, Operator.
Michael J. Farrell, Operator.
John D. Farris, Operator.
Alex. H. Fisher, Operator.
James Fitzgerald, Operator.
Charles A. Flagg, Operator.
John Flynn, Operator.
William J. Gearin, Operator.
Michael J. Greene, Operator.
Peter F. Griffin, Operator.
Ira B. Harvey, Operator.
Daniel J. Healy, Operator.
Michael F. Hogan, Operator.
Thomas Hogan, Starter.
Charles A. Holt, Operator.
Bertrand L. Jose, Operator.
George H. J. Kearns, Operator.
Howard L. Kelley, Operator.
James E. Kelley, Operator.
Joseph J. Kelley, Operator.
John A. Kelly, Operator
Richard Kirk, Operator.
John M. Knox, Chief Clerk.
John F. Ladd, Operator.
James J. Lee, Operator.
Murdock MacLeod, Operator.
Michael J. Mahoney, Operator.
Thomas A. Meehan, Operator.
Nils Mikkelsen, Operator.
George W. Munro, Starter.
Murdock Murray, Conductor.
Christopher Nolan, Operator.
James W. O'Brien, Operator.
John A. Pearson, Operator.
Lewis A. Power, Operator.
Michael Rooney, Operator.
Robert E. Ryan, Starter.
John F. Sampson, Operator.
John Schwamb, Operator.
John T. Schomer, Operator.
Melvin F. Scott, Operator.
Joseph F. Soule, Operator.
Jacob B. Treible, Operator.
Byron E. Tribe, Operator.
George H. Warren, Operator.
Maurice White, Operator.
Charles R. Welch, Operator.

TREASURY DEPARTMENT

W. T. Curley, Station receiver
J. M. Ellis, Station receiver
Newman C. Fielding, Ticket agent.
W. S. Gilley, Station receiver.
E. R. Morehouse, Change distributor.
P. F. Rooney, Station receiver.
Wm. E. Searson, Change distributor.
C. Skelley, Station receiver.
E. E. Smith, Station receiver.
A. E. Stone, Station receiver.
Mrs. M. Walsh, Chief clerk.
G. W. Woods, Station receiver.

Employees Who Have Entered the 30-Year Class

BUREAU OF AUDIT

*M. J. Horgan, Construction clerk.

GENERAL MANAGER'S OFFICE

*E. M. Flint, Asst. to general manager.

LEGAL DEPARTMENT

*Miss Mary L. Donnelly, Stenographer.

MAINTENANCE DEPT.

*O. T. Cimpher, Asst. signal engineer.
*J. E. Dempsey. Foreman.
*W. J. Drummond, Draftsman.
*F. C. Fish. Foreman.
M. J. Flaherty. Track cleaner.
*J. Kelliher. Truck driver.
T. Killion. Trackman.
J. Kriedel. Foreman.
*R. D. Long. Yard foreman.
*R. E. Mahoney. Track repairman.
J. P. McCarthy. Track cleaner.
W. McLean. Track cleaner.
*J. O'Neil. Track cleaner.
A. Phillips. Teamster.
J. Quann. Trackman.
M. Salgie. Yard foreman.
*W. C. Smith. Signal engineer.
S. W. Wilkins. Clerk.

POWER DEPARTMENT

Mahlon D. Childs. Head lineman.
John J. Collins. Water tender.
*Thomas Connolly, Mason tender.
Daniel Corbett, Switchboard man.
*Cyrus Corliss, Const. Engineer.
*Charles H. Dey, Supvr. wire and conduits.
*William H. LeBlanc, Groundman.
Henry F. Marshall. Lineman.
Alex McMillan. Head lineman.
Walter A. Patterson. Asst. Engineer.
James Rapson. Attendant.

ROLLING STOCK & SHOPS DEPARTMENT

*T. F. Allen. Painter. Everett.
*J. L. Bolster. Carpenter, Everett.
*J. Burns. Painter. Everett.
*W. A. Conroy, Watchman, Salem St.
*N. Dermody. Night foreman, Forest Hills.
*J. J. Doherty. Repairman, Salem St.
B. B. Donoghue. Machinist, machine shop.
*E. Galvin. Repairman, Sewell St.
*P. Heaney. Mach. spec., truck shop.
*J. Hegarty. Repairman. Milton.
*C. A. Howard. Supvr. of equip., South Section.
H. E. Janvrin. Fmn. br. worker, Everett.
*E. Lee. Repairman, North Cambridge.
T. Livingston. Fmn. air brake. Everett.
*J. F. Lothrop, Night foreman. Eliot Sq.
L. McCullough. Mach. helper, machine shop.
D. J. Monahan, Repairman, East Boston.
T. F. Murray. Watchman, Clarendon Hill.
*J. F. Powers, Shifter, Lotus Place.
J. A. Smillie. Foreman. Bennett St.
F. O. Stoltz. Armature winder. armature shop.

TRANSPORTATION DEPARTMENT

Safety Division

Edward A. Mullen. Starter.
*John L. McCuen, Inspector.

Rapid-Transit Division

James Burns. Platform starter.
Duncan R. Cameron. Motorman.
*James F. Cannon. Platform starter.
John J. Carter. Motorman.
*Roland A. Conway. Yardmaster.
*James J. Cummings, Motorman.
Thomas F. Cummings, Yardmaster.
*George J. Ducloe. Yardmaster.
*George W. Emery, Guard.
*William J. Fahey. Motorman.
Alexander Graham, Motorman.
Maurice D. Lacey. Motorman.
*John Morrison. Platform starter.
James Robinson, Platform starter.
*Nelson Towle, Guard.
*Samuel A. Wittet. Guard.

Division 1

*John Axon. Motorman.
William Barry. Conductor.
*Fred W. Battle. Starter.
*John E. Carr, Motorman.
William J. Doyle. Motorman.
Frank J. Gill. Motorman.
George W. Harmon. Conductor.
Dennis Hourigan. Motorman.
Martin King. Motorman.
Aeneas R. MacDonald. Motorman.
James McHugh. Motorman.
James B. Mellen, Conductor.
*George Pollard. Conductor.
*Alfred E. Shaw. Conductor.
Jeremiah F. Sullivan, Motorman.
Peter Waldron, Conductor.
*Francis Waters, Motorman.

Division 2

*Charles Y. Black. Motorman.
William Burke, Motorman.
Judson N. Caldwell, Operator.
David T. Campbell. Operator.
*Patrick Clark. Motorman.
*Michael M. Conley. Operator.
Henry J. Connor. Operator.
Michael F. Crowell, Motorman.
Henry Dunn, Motorman.
Henry J. Elmore. Conductor.
Michael F. Fallon. Motorman.
Charles B. Goodrich, Conductor.
Edwin F. Johnson, Motorman.
*Charles E. Morse. Operator.
*Arthur Pickard, Motorman.
M. J. Prindeville, Operator.
James W. Quinn. Operator.
Charles W. Schada. Operator.
*John F. Sullivan, Operator.

Division 3

*Harry F. Barrett. Operator.
*Michael J. Broderick, Operator.
William A. Bushey, Motorman.
*Cornelius Callahan, Motorman.
*Michael Coen, Motorman.
*Thomas J. Coen. Motorman.
Elias W. Elliott, Operator.
George Herrick. Motorman.
Edmund S. Horne. Operator.
John Lannigan, Motorman.
*Daniel Lehan. Operator.
*Anthony Mahoney. Operator.
William McTighe, Motorman.
Michael J. Sullivan, Operator.
*William H. H. Walker. Operator.
William G. Wentzell, Operator.

Division 4

*John F. Carragher. Operator.
James E. Dunn. Operator.
*William H. Figg. Operator.
John P. Garland, Operator.
*Harry S. Haley. Starter.
Patrick D. Harrington. Operator.
*Albion A. Littlefield. Operator.
*Patrick J. McDonough. Operator.
*Walter W. Payson, Operator.
*Michael F. Ryan, Operator.
Edward H. Thayer. Operator.
Thomas Walsh, Operator.
*Franklin S. Young, Operator.

TREASURY DEPARTMENT

F. T. Bunker. Station rec'r.
T. A. Finnerty. Station rec'r.
T. J. Hayes, Change distributor.
R. L. Leahy. Voucher clerk.
*D. J. Prendergast, Rent agent.
*Abram Stultz, Station rec'r instructor.

TRUSTEES' OFFICE

*H. W. Norton, Executive secretary.

Thirty-five-Year Emblems Awarded

MAINTENANCE DEPARTMENT

F. H. Peatfield. Wireman.

POWER DEPARTMENT

George Langille,. Line foreman.

TRANSPORTATION DEPARTMENT

C. R. Tufts, Operator.

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*These 30-year emblems were awarded before the date due, to avoid exchange within a very short time.

KNOCKS AND BOOSTS

NUMEROUS incidents occur from day to day which affect the public relations of the Railway. Good will on the part of the public is built up materially by the contacts with the men who are in charge of the Railway's cars and buses. Only a few of these contacts result in criticism or commendation, but each comment on the service, complimentary or otherwise, is well worth careful study.

KNOCKS

A lady who had several bundles in her hands reports that she handed a conductor a strip of two tickets on boarding her car, although only one was required. Her idea was that the conductor would tear off one and return the other to her. She was told that only one ticket was required, but evidently did not explain that she wished one torn off and the other returned. She reports that the conductor was sarcastic when he finally did return the extra ticket.

COMMENT. The conductor in question did not remember having made the reply attributed to him, and from the evidence before us it would seem as if the lady might have explained that her hands were occupied and that she wished the conductor to tear off the ticket. She felt that she had been treated discourteously, however, which indicates that she was not satisfied with the way in which the incident had been handled. These small incidents need to be watched as they contribute to the building of ill will toward the Railway.

When a newspaper man was boarding a surface car his foot caught in the door. He writes that he suggested to the conductor that the latter take a little more time in closing the door. The reply was "Pull your feet in faster."

COMMENT. While this reply may have been intended to be humorous the patron did not take it that way. Such answers do not tend to build up good will.

A patron took a bus at North Station, desiring to leave it at State and Congress streets. He did not press the button for that stop as he supposed it to be a regular stop. He was carried to Milk street, and the driver informed him that the bus does not stop at State and Congress streets unless a signal is given. He wrote in to check the accuracy of this statement and to secure information regarding the bus schedule.

COMMENT. This was not a serious complaint, and the inquiries were made in a friendly spirit. The incident illustrates the numerous customer contacts which an operator has in the course of the day and the opportunity which these afford for good salesmanship. Probably the operator did all he could do under the circumstances.

BOOSTS

A patron who had a slight injury chargeable to the conductor told the latter that it was due to his interest and sympathy that the patron refrained from filing a damage claim which he could undoubtedly have collected. The conductor had closed the car door on the patron's finger. On noting what had happened he apologized and expressed sympathy. From time to time later he inquired as to the condition of the finger.

COMMENT. An incident like this is refreshing and indicates that a sympathetic attitude on the part of a car operator may be appreciated even when he is at fault.

On behalf of the committee in charge of the pageant held in Medford early in July, a member thanked the trustees for our bus service, which was considered most important in getting people to the pageant and in the success of the pageant itself. The drivers of the buses are commended for their unfailing courtesy and good nature, and also Mr. Scott, not only for his unfailing courtesy but for the spirit of co-operation which he showed at all times. He was on hand to see that all persons planning to use the buses had the opportunity to do so. "Such interest as this shows that even the large corporations, through the interest of their employees, possess, in the corporations themselves, a soul."

COMMENT. The Medford pageant was a memorable feature of the tercentenary celebration. All "El" employees who helped make the pageant a success, and all other employees as well, will be gratified to learn how much the Railway service was appreciated.

A passer-by noticed the owners of a motor car trying ineffectually to put out a small fire. As there was danger that the fire might become serious the man hailed a passing "El" bus driver and asked if he had a fire extinguisher. The driver got out of his bus, rushed to the car, put out the fire and was away before the owner could thank him. The passer-by sent in an appreciative letter of commendation.

Comment: This was an unusual opportunity to make friends for the Railway and the bus operator made the most of it.

CHANGES IN THE RESERVE FUND

Fiscal Year 1928-29
July 1, 1928, $1,000,000

July	$331,329.58*	Jan.	$74,244.54†
Aug.	398,356.82*	Feb.	53,235.38*
Sept.	204,840.30*	Mar.	245,409.29†
Oct.	3,135.31†	Apr.	140,661.08†
Nov.	2,583.64†	May	148,719.82†
Dec.	225,043.06†	June	32,187.99*

Profit and loss credit........$180,153.33

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†Excess of revenue over cost of service.

Fiscal Year 1929-30
July 1, 1929, $1,000,000

July	$285,903.19*	Jan.	$195,210.33†
Aug.	361,650.56*	Feb.	18,035.80†
Sept.	197,825.11*	Mar.	178,957.43†
Oct.	164,866.77†	Apr.	54,282.43†
Nov.	64,148.53†	May	45,824.02†
Dec.	286,824.84†	June	$113,749.60*

Profit and loss credit..........$50,978.31

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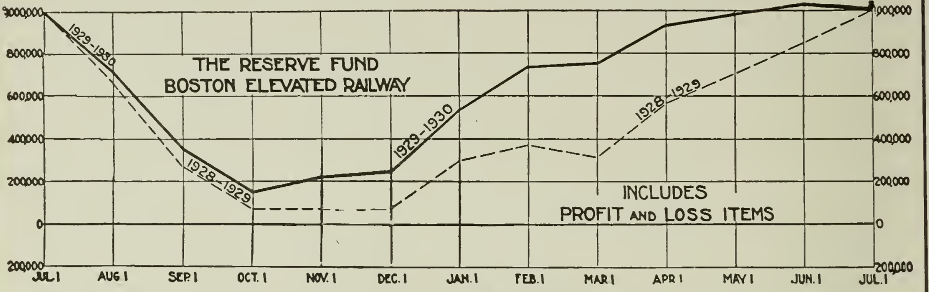
*Excess of cost of service over revenue.



JUNE OPERATION

GENERAL FINANCIAL DATA	1930	1929
Cost of service exceeded revenue	$113,749.60	$32,187.99
Operating revenue per car-hour (A.E.R.A. std.)	$5.87	$6.00
Operating revenue per car-mile operated	58.23c	59.53c
Average fare per revenue passenger	9.315c	9.316c
Ratio operating expense to operating revenue	71.38%	70.34%
PASSENGERS CARRIED		
Revenue passengers	26,499,360	27,616,990
Per cent 5c, 6¼c and 7c passengers	17.52%	17.67%
Revenue passengers per car-mile operated	6.049	6.193
OPERATING FACTS		
Trips operated	587,187	582,583
Car-miles operated:		
Rapid-transit lines	1,270,966	1,305,551
Surface, two-man	866,047	1,156,772
Surface, one-man	1,604,622	1,422,433
Sprinkler cars	—	1,066
Motor bus	638,555	573,868
Total miles operated	4,380,190	4,459,690
ACCIDENT DATA		
Accidents per 10,000 car-miles	1.599*	1.465*
Accidents per 10,000 bus-miles	1.598*	1.757*
Revenue passengers carried per accident	19,970	20,680
Average number of witnesses per accident	3.14	3.05
COMPLAINTS AND DEFECTS		
Complaints in regard to car service	54	15
Employees complained of by car riders	58	67
Car-defects reported per 10,000 car-miles	2.5	3.7
INFORMATION ABOUT POWER		
D.c. kw.hr. output gross for month	15,563,500	15,960,700
Maximum kw. load	62,000	62,900
Tons of coal consumed for power	12,532	13,003
Lbs. of coal for power per d.c.kw-hr. at cars	1.808	1.831
Operating and maintenance cost of power, including depreciation:		
Per d.c.kw.-hr. for car service	1.001c	1.115c
Per revenue car-mile	3.78c	4.28c
Kw.-hr. per revenue car-mile	3.780	3.716

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*Does not include miscellaneous accidents or derailments.

July 18, 1930. EDWARD DANA, *General Manager.*

BOSTON ELEVATED RAILWAY
CO-OPERATION

Volume 9 AUGUST, 1930 Number 8

Places People Like to Visit

Photo by Dadmun

LONGFELLOW HOUSE IN CAMBRIDGE

(See page 141)

To All "El" Employees

ONE of the best assets that any man or woman can have is a good memory. A new acquaintance is flattered if we remember his name, and something about his interests. A car rider is appreciative if accurate and complete information is furnished, especially if it is forthcoming without delay due to looking up the facts in a book. A court and jury like to have accident witnesses give consistent, straightforward testimony. These examples illustrate the many opportunities which exist for the exercise of the memory.

While some people have better memories than others, this is due not so much to native ability as to the use made of that ability. The chief enemy of memory is lack of concentration, caused in turn by lack of interest. If we desire to remember anything we must first focus attention upon it. In the camera we get a clear picture only if the focus is correct; so it is with the memory. We cannot remember unless we see clearly.

A practical aid to memory is to tie the new knowledge to what we already know. We can think about the new fact a little to see if we do not already know something else that will help us. Thus if we wish to remember the approximate population of St. Louis or Baltimore we can relate the figures to the population of Boston. These two cities are slightly more populous than Boston, the two having about the same population. For most purposes it would be accurate enough to say that Boston's population is 800,000 and that of the other cities 850,000 each. The effort to associate in one's mind these cities of about the same population is in itself a real aid to the memory.

It is a good thing, also, now and then to freshen up the memory, to recall what we wish not to forget and think it over again. Each such review fixes the name, face or event more firmly in mind.

Good memories are proving especially useful this tercentenary year when so many more visitors than usual are here.

Edward Dana

BOSTON ELEVATED RAILWAY

CO-OPERATION

VOL. 9 AUGUST, 1930 NO. 8

NEW BUS GARAGE IN ROXBURY

Unit for Fifty-Six Large-Type Buses Authorized by Trustees. Will Provide Facilities for Repair of Seven Buses Simultaneously Over Drop Floor. Contemplated Additions Will Bring Ultimate Capacity of Garage to 168 Buses.

CONTRACT has just been awarded for the construction of a new bus garage, modern in every respect, at Washington street near Guild street, Roxbury, on part of the old Bartlett street shop property. The garage will be known as the Bartlett street garage.

This garage will house 56 of the large type buses which have a seating capacity of 39-40 passengers. The proposed unit will relieve particularly the Allston, Arborway and Somerville bus garages. It will be located and constructed so that at some future time it will be possible to build two additional units of the same size with a total capacity for the three units of 168 buses. Contract for the construction of the present unit has just been awarded to the J. Slotnik Company of Boston at a price of $165,488.

The garage will have connected with it an auxiliary building. The outside dimensions of the garage will be 118 feet by 176 feet and of the two-story auxiliary building 42 feet by 52 feet. The height of the garage from the floor to the trusses will be 15 feet. Both the garage and the auxiliary building will have a concrete foundation and floor, brick walls, steel frame, steel sashes, and a gypsum roof covered with tar and gravel. The floor area of the new garage will be 20,000 square feet and of the auxiliary building, 2,180 square feet. The garage will be sprinklered throughout.

An unusual construction feature of the garage is its clear width without obstruction of 116 feet. Hitherto, it has been the general opinion that it is not practical to construct trusses which are fireproofed of a span greater than 80 feet because of the weight of the fireproofing. The wider span, without columns, is made possible by using steel "I" beam sections for the truss cords instead of built up angle members. Doing away with the columns in a garage of this width will provide a most satisfactory floor area for the easy movement of buses.

DROP-FLOOR REPAIR AREA

In the new garage there will be a drop-floor repair area by means of which the under part of seven buses may be repaired at one time. The largest repair area to date in the other garages can handle only five buses. This drop-floor area will be well ventilated by air inlets at the lower floor level which will admit the outside air. At the opposite end of the runways, fresh air will be admitted by registers opening into a cross duct. This duct will extend to and above the roof and will be provided with large revolving ventilators.

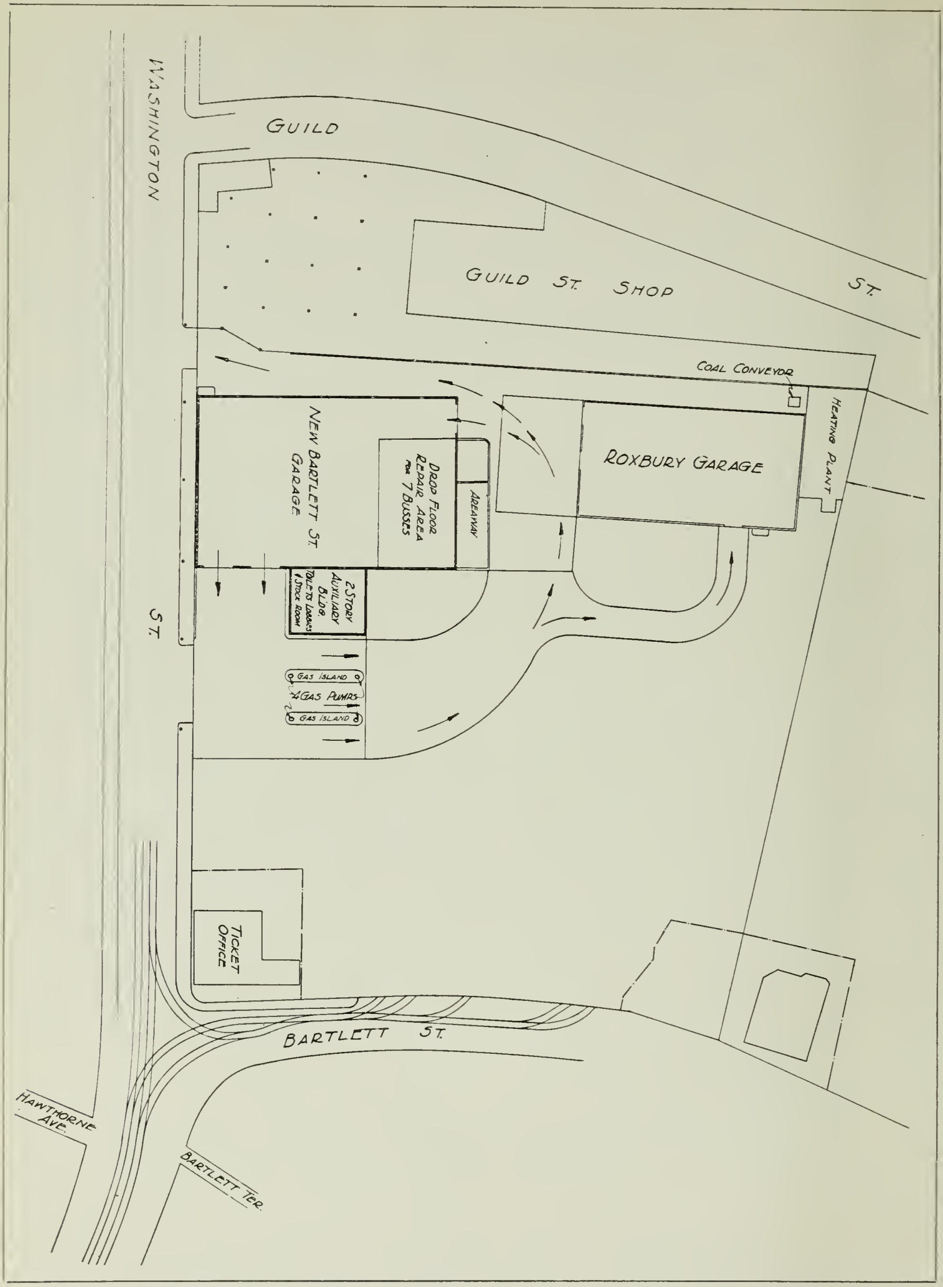
Two of the bus repair runways will be extended through the rear wall into the yard, thus providing short outside pits in addition to the inner repair runways. These extended runways will make it possible to run buses directly to two of the runways without using the main entrance to the garage.

Convenient to the repair section will be located modern facilities for bus repair work, including small tools, work benches, compressed air, hoists, etc.

HEATING

The garage proper will be heated by means of five unit heaters located 12 feet from the floor. Each of the heaters will consist of a steam coil and a fan blower. These units will supply sufficient hot air to heat the building to a temperature of 60 degrees in zero weather. The auxiliary building will be heated by the usual method of direct radiation. High-pressure steam will be supplied to the heating system from a central heating plant now located on the property. The steam will be carried a distance of about 250 feet in overhead pipes.

The entrance and exit doorways to the garage will each be 20 feet wide and be provided with electrically operated doors



NEW BARTLETT ST. GARAGE, WASHINGTON AND GUILD STS., ROXBURY

controlled by push buttons located in the building. As the buses enter the garage they will run through a spray washer which will wash a bus in two minutes.

Two gas filling stations will be so located that buses entering the yard must pass by them. Each of these two stations will be equipped with two electrically driven pumps, each having a capacity of discharging 25 gallons of gasoline a minute. There will be two gasoline tanks each with a capacity of 2,000

(Please turn to page 141)

KNOCKS AND BOOSTS—A COURTESY CLINIC

MANY interesting comments, commendatory and otherwise, are received from patrons of the Railway in the course of the year. In these are hints as to how service can be improved and they are well worthy of careful study. As space permits, selections from these comments are being published in "Co-operation" from time to time, in each case with a brief comment intended to emphasize the high spots in the letter. Here are a few more examples:

Knocks

A stockholder of the Elevated reported that while riding on a surface car he signaled for the car to stop. He stood at the front door. The operator was engaged in an animated conversation with a passenger and drove by the stop without slackening speed. When the passenger called his attention to the fact and remarked that if the operator had been paying attention, he, the passenger, would not have had to walk back, he received an insolent answer. The same was true when he asked for the operator's number. In writing about this incident the complainant asked this question: "What use is it to spend thousands of dollars to build up good will in order to have it destroyed by insolent and careless employees?"

COMMENT. Little comment is needed on this incident, which is of course very exceptional.

Complaint was received from a lady who was assisting a lame patron of the Railway to enter a subway station that she was asked for a fare although she did not wish to ride. She stated that she received "an outrageous call-down." The gateman involved states that the lady did not say she was merely assisting a friend down the stairs or he would not have asked for a fare.

COMMENT. Here is a case where a word of explanation might have saved a formal complaint. The gateman was, of course, following instructions in expecting a fare from each of the two persons in this case. However, the fact that the lady thought she had been "called down" shows that a little more tact might have been used in this case.

Some time ago the Boston Transcript quoted from the Worcester Telegram the following comment, under the caption "Hasn't Got Ready to Start."

"The Boston Elevated Railway has again won a first prize for safety and health promotion. Perhaps some day it will win a prize for courtesy to patrons, but not yet, Marie, not yet."

COMMENT. This criticism is rather out of line with the usual run of references to "El" employee courtesy. However, the writer of the note must have had a grievance of some sort.

Boosts

A supervisor of one of the playgrounds in "El" territory writes enthusiastically regarding the manner in which the children from her playground were carried to the Fenway Park to participate in the Boston schools tercentenary celebration. She complimented the bus operator for his assistance in the care of the children and his general thoughtfulness. The operator replied that he was only doing his duty.

COMMENT. In this case a good salesman made the most of his opportunity to make friends for the Railway. While, as he said, he was only doing his duty, he was doing it in a highly acceptable manner.

A Cambridge patron commends an inspector by saying that while the latter's station is a hard one this inspector uses intelligence in the way he handles the traffic. He is always ready to grasp any opportunity to send out his buses without delay, is always on the job and ready so to arrange things that there is no holding up of traffic or service. "Your riding public is far from intelligent, as one who rides a lot soon learns (the patron refers principally to the blocking of doors) and ties up the buses to a large extent, so that the inspector has to be ready to scheme at all times, especially in handling school children."

COMMENT. This patron is rather hard on the public, as far as intelligence goes, but he shows appreciation of the difficulties with which the men in charge of the service have to contend.

A Brookline patron commends a conductor because he seems "to have a real talent for handling people." His unbroken amiability, his helpful response to every question and his ready smile convince everybody that he regards his passengers as something more than so many pests to be endured. The whole mental atmosphere changes in response to his own.

COMMENT. This last sentence is worthy of thought. Is it true that the atmosphere in a car or bus is to a considerable extent under the control of the Railway man in charge? This customer evidently thinks it is so.

ENORMOUS INCREASE IN "EL" INVESTMENT

THE chart below furnishes a graphic picture of the history of the Boston Elevated Railway from the standpoint of the amount of money invested in it. As stated on page 30 of the report of the public trustees for 1929, of which all employes have copies, the total amount invested in the property as of Dec. 31 was $175,224,091.62. Of this amount the Railway Company provided $113,523,426.47.

The City of Boston has also over 52½ millions in the Railway and the Commonwealth of Massachusetts has nearly $8,000,000 invested. The balance of something over a million dollars is the investment in property leased by the "El."

A 593-PER CENT INCREASE

In the graphs shown below the data for 1929 are compared with 1897 when the West End Street Railway was consolidated with the recently formed Boston Elevated Railway. During this period investment in the "El" increased 593 per cent. In other words, the amount of money invested is nearly seven times what it was thirty-four years ago.

In the same period the number of revenue passengers carried has more than doubled, but the investment has increased nearly three times as fast as the passengers carried. Over the whole period the increase in passengers carried has been greater than the increase in population as reflected in the revenue rides per capita (generally known as the "riding habit"), but for the past few years this has not been the case. The change is, of course, due to the rapid spread in the use of the automobile.

CHANGES IN PENSION LIST

ON page 107 of the issue of "Co-operation" for June, the number of pensioners on the list was stated to be 489. The June report shows a net reduction of one in the number of pensions, the total number thus being 488.

Joseph J. Boyle, carpenter.
Pat. J. Hart, gateman.
Patrick Kelley, mason.

The following have died:

Pat. W. Manning, motorman.
E. J. McClench, inspector of vehicles.
Wm. H. Sigston, gateman.
Geo. A. Morse, warder.

WHAT WORK WILL DO

By A. E. J.*

The surest cure for trouble
Is good hard work;
So when your heart is heavy
It will not do to shirk.

Concentration on one's work
Relieves the mind awhile.
The effort brings its own reward,
And frown gives way to smile.

No matter what the trouble is
Work is the cure to choose.
Give this prescription a fair trial,
'Twill even banish blues.

Whenever kindred spirits meet,
Work is their favorite theme.
Their occupation fills their minds,
They have no time to dream.

So learn to work when young, son,
And do it with a will;
The working habit thus acquired
Your life with joy will fill.

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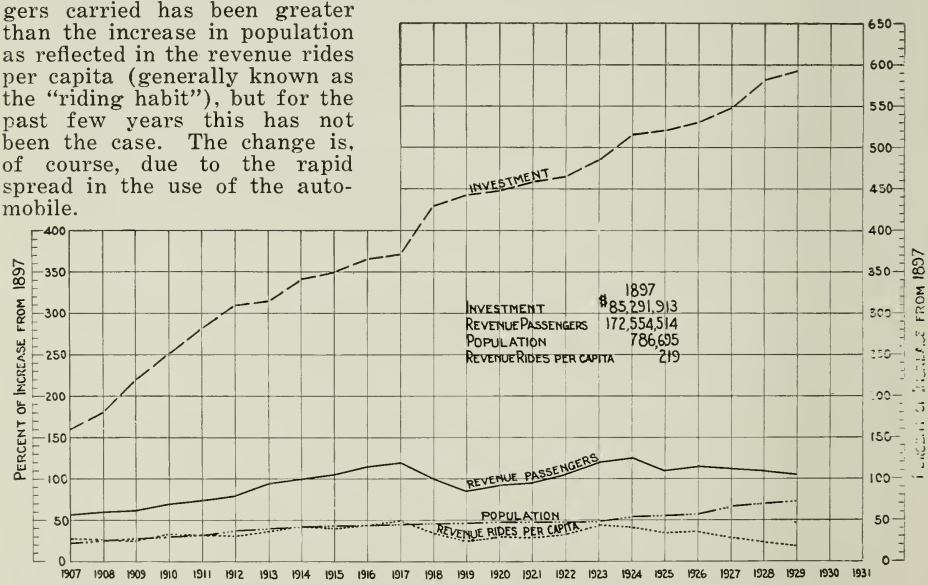
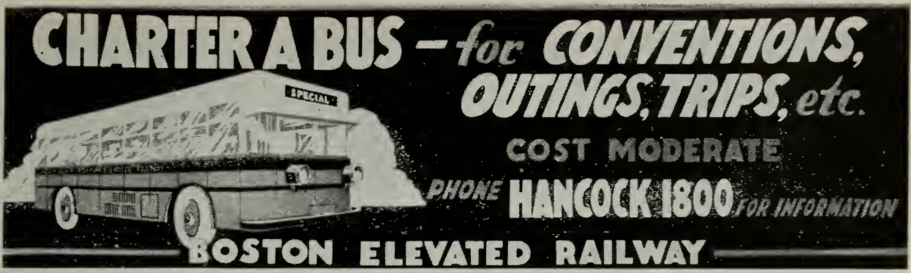
*"A. E. J." is the wife of John Jeffrey, foreman in the "El" paint shop at Everett.



THIS CHART COVERS A PERIOD OF TWENTY-FIVE YEARS



CHARTER A BUS — for CONVENTIONS, OUTINGS, TRIPS, etc.
COST MODERATE
PHONE HANCOCK 1800 FOR INFORMATION
BOSTON ELEVATED RAILWAY

THIS CLERESTORY CARD SHOULD BRING BUSINESS

"EL" NEWS NOTES

Items of Interest Regarding Recent Incidents With Which All Employees Should Be Familiar

FIVE-CENT FARE IN LOCAL FARE ZONE BEGINNING SEPT. 1

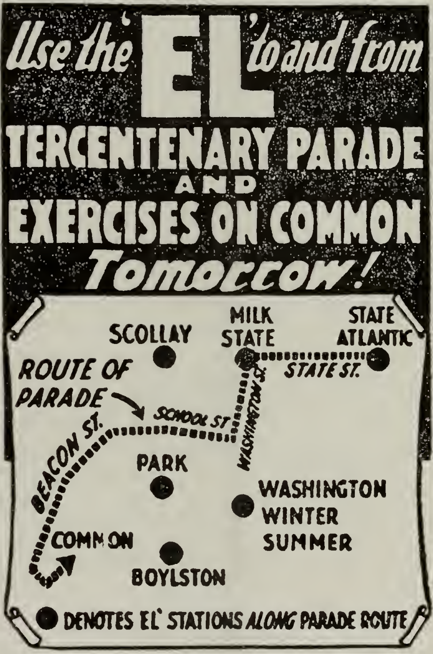
FOR an experimental period of 30 days beginning September 1, the Board of Public Trustees of the Boston Elevated Railway have authorized a reduction in the rate of local fares from six and one-quarter to five cents without transfers.

The reduction of fare in local fare zones is prompted by the necessity of increasing riding in order to offset, if possible, the loss in riding from the use of the private automobile and present industrial conditions, which together caused a reduction of 1,380,409 passengers, or about five per cent, in the number of revenue passengers carried on the system during the month of July, 1930, compared to the same month last year.

Under the law, the Boston Elevated must be operated on a service-at-cost basis. A decrease in revenue, due to a reduction in riding, can be met ultimately only through proper economies, or by an increase in the rate of fare, or by increasing riding. A reduction of $2,000,000 in operating expenses has been made during the past three years, which resulted in offsetting the reduction in revenues due to the decrease in riding. This reduction in the local fare rate is an effort to increase riding. It is hoped that this change will be successful and that no further adjustment in the rate of fares for local zones will be necessary.

The local rate of fare is of value for short rides throughout the Elevated system. There are 120 routes over which the local rate of fare is in effect. During the calendar year ending December 31, 1929, there were 53,272,366 pas-

(Please turn to page 139)



Use the 'EL' to and from TERCENTENARY PARADE AND EXERCISES ON COMMON Tomorrow!

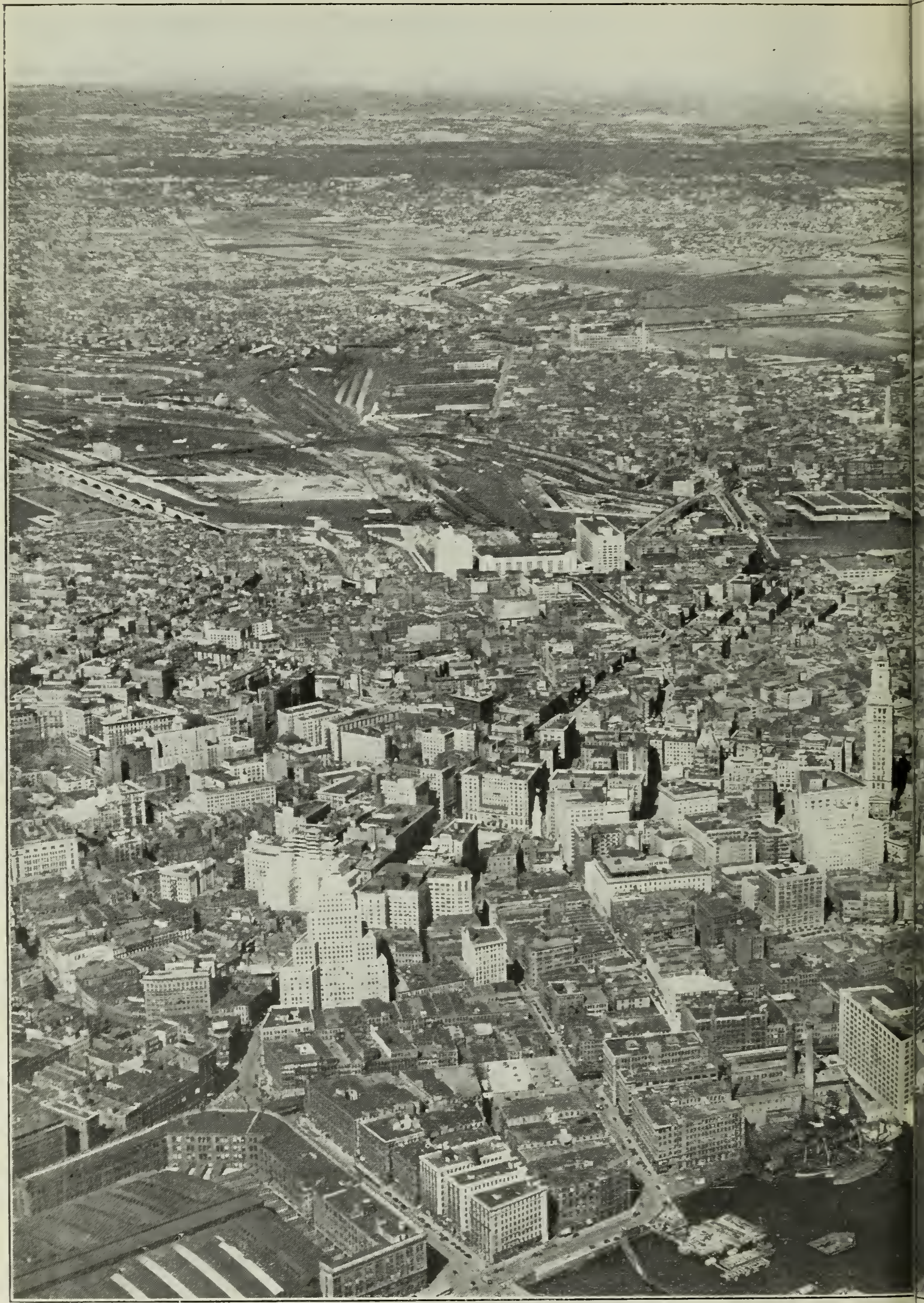
Motorists—don't drive into the city on "Great Meeting Day." Use the 'El' System to save your time and to avoid traffic delays.

Boston Elevated Rapid Transit Lines will take you quickly and directly to the parade route and to the Boston Common. Trains every 3 and 4 minutes.

BOSTON ELEVATED RAILWAY

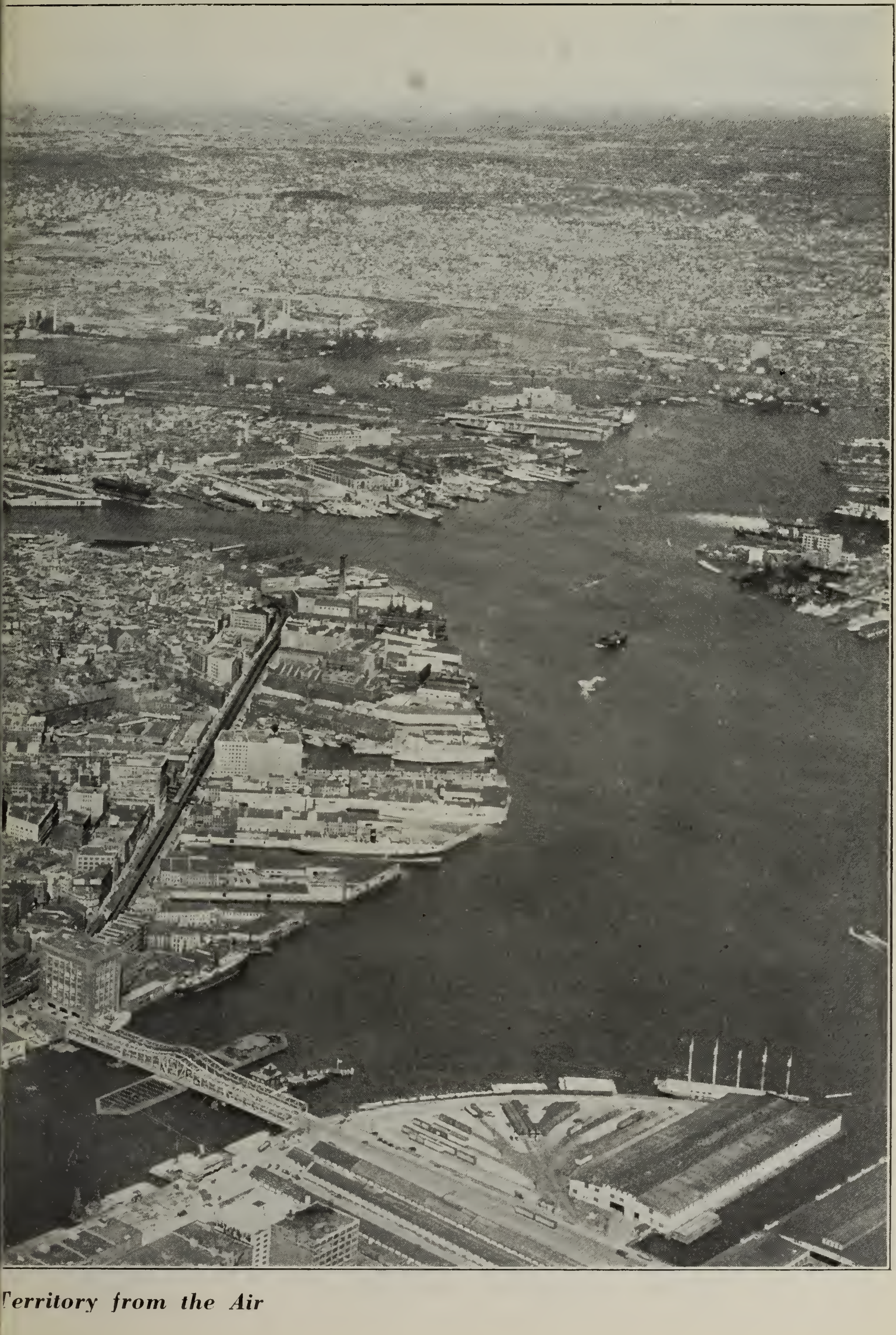
PARK WHERE THE 'EL' BEGINS

NEWSPAPER "AD"



Fairchild Aerial Surveys, Inc.

Northern Part of the “Te



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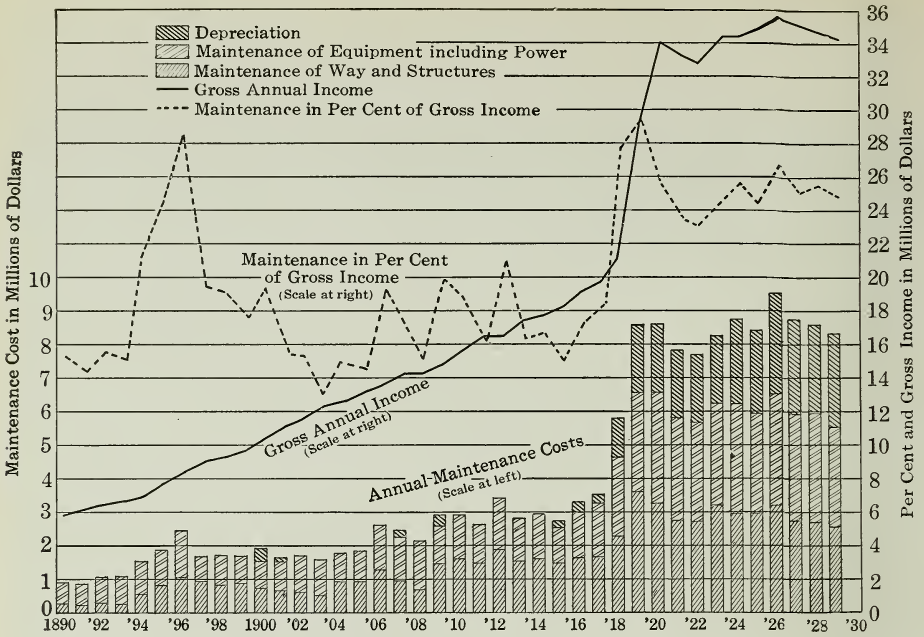


WHAT IT COSTS TO MAINTAIN THE "EL"

THE accompanying table and graphs tell the story of maintenance of the Elevated property over a period of forty years. To save space the table is reproduced only back to 1910, a 20-year period. This covers trustee operation and long enough earlier to permit comparison of the maintenance costs before and after the World War period and its effects upon costs. In the graphs the maintenance costs are given in dollars and in percentage of gross income. It will be noted that in recent years maintenance has cost about one-quarter of gross income as compared with about one-sixth between 1905 and 1915.

COST OF MAINTAINING THE "EL"

Year ended Dec. 31	Maint. of way and structures incl. acct. 12, snow	Maint. of equipment	Power maint. incl. proportion of superintendence	Depreciation	Total
1929	$2,413,018	$2,819,257	$250,694	$2,878,055	$8,361,024
1928	2,720,944	2,963,457	297,725	2,671,142	8,653,268
1927	2,765,686	2,868,226	335,862	2,824,220	8,793,994
1926	3,249.086	3,054,504	316,166	2,841,722	9,461,478
1925	2,967,896	2,752,796	266,770	2,496,000	8,483,462
1924	2,949,524	3,033,022	328,756	2,496,000	8,807,302
1923	3,268,677	2,665,532	351,889	2,004,000	8,290,098
1922	2,714,653	2,551,688	357,956	2,004,000	7,628,290
1921	2,746,844	2,741,357	348,764	2,004,000	7,840,965
1920	3,209,275	3,011,850	468,696	2,004,000	8,693,821
1919	3,740,515	2,585,720	338,582	2,004,000	8,668,817
1918	2,312,932	2,077,699	305,629	1,184,670	5,880,930
1917	1,698,175	1,489,863	146,158	320,000	3,654,196
1916	1,601,288	1,292,899	142,685	320,000	3,356,872
1915	1,444,464	1,105,723	105,856	142,990	2,799,033
1914	1,626,375	1,225,511	150,125	——	3,002,011
1913	1,550,522	1,184,073	130,619	——	2,865,214
1912	1,916,338	1,306,922	180,891	——	3,404,151
1911	1,418,016	1,044,806	180,404	——	2,643,226
1910	1,573,227	1,063,848	159,592	——	2,796,667

"EL" NEWS NOTES

(Concluded from page 135)

sengers carried at the local rate of fare, which represented almost 16 per cent of the total number of revenue passengers carried that year.

It is the earnest desire of the trustees to increase riding in local fare zones by offering a fare of five cents for such rides. It is hoped that this action will receive the co-operation of the public and that riding will be increased.

This change does not affect the rate of the regular fare or the transfer privileges at the regular fare.

ECONOMIES ENABLE RAILWAY TO MEET ALL CHARGES FOR TRUSTEE YEAR

FOR the trustee year ending June 30, 1930, the total receipts from all sources of the Boston Elevated Railway were $33,597,154.90, which met the cost of service after making year-end adjustments of tax accruals, road and equipment accounts and suspense accounts amounting to $50,978.31.

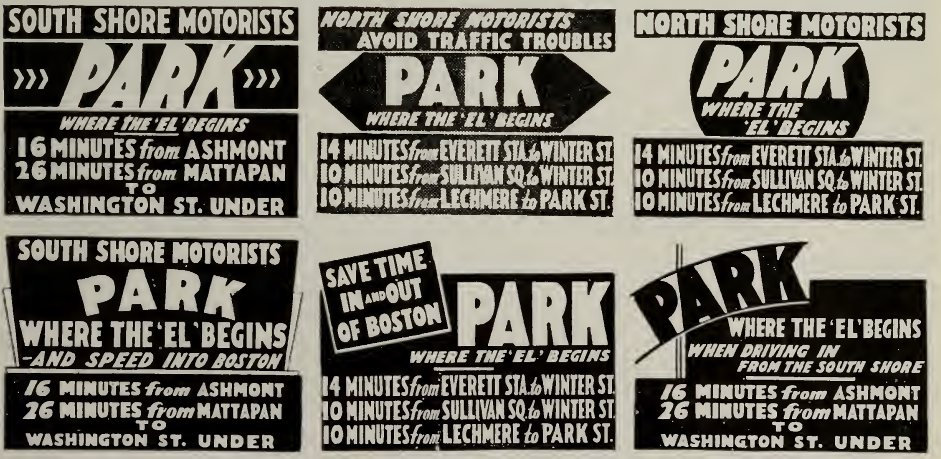
The Railway was able to meet all operating expenses and fixed charges for the trustee year. The reserve fund has been restored to the original amount of $1,000,000 as of June 30 as is required by the Public Control Act. No further payment can be made at this time to reduce the balance due the municipalities on the 1919 assessment.

Receipts declined $715,651.28 for the trustee year ending June 30 of this year compared to the previous trustee year. From this loss in riding it is apparent that only through the most careful economies was the Railway able to avoid a deficit. Total expenses of running the Railway were reduced $844,826.30 compared to the trustee year ending June 30, 1929. Total cost of service and total operating expenses were lower this year than for any year since that ending June 30, 1923, when a lower wage scale was in effect.

The passenger mileage for the trustee year just ended was 56,271,740 compared to 57,247,490 for the previous trustee year. Despite a reduction of 3.13 per cent in total operating expenses, there was a reduction of only 1.7 per cent in passenger revenue miles operated. The mileage operated in the trustee year just ended was greater than in any but four of the previous 11 years of public control. Moreover, the mileage operated in the past year was greater by more than 1,800,000 miles than the average mileage for the 11 previous years. Actually, more mileage was provided per million passengers carried in the year ending June 30, 1930, than in the five previous trustee years.

The decline of $715,651.28 in receipts is attributable to unemployment and to the increasing use of the automobile, especially during the summer months and on Saturdays, Sundays and holidays. Through various mediums every effort is being made to maintain riding.

It is significant to point out here that the loss in riding on the Boston Elevated Railway for the last six months, since the beginning of the period of depression, has been 2.61 per cent compared to the same period last year, whereas the average decrease for 13 of the large cities in the country, comprising 16 operating companies, has been 4.53 per cent. Moreover, all of these 16 comparable companies, with the exception of the companies operating in New York, have shown greater losses, ranging as high as 15.6 per cent for the railway operating in Detroit. It is of further significance that for this six months period the only



SOUTH SHORE MOTORISTS
››› PARK ›››
WHERE THE 'EL' BEGINS
16 MINUTES from ASHMONT
26 MINUTES from MATTAPAN
TO
WASHINGTON ST. UNDER

NORTH SHORE MOTORISTS
AVOID TRAFFIC TROUBLES
PARK
WHERE THE 'EL' BEGINS
14 MINUTES from EVERETT STA. to WINTER ST.
10 MINUTES from SULLIVAN SQ. to WINTER ST.
10 MINUTES from LECHMERE to PARK ST.

NORTH SHORE MOTORISTS
PARK
WHERE THE 'EL' BEGINS
14 MINUTES from EVERETT STA. to WINTER ST.
10 MINUTES from SULLIVAN SQ. to WINTER ST.
10 MINUTES from LECHMERE to PARK ST.

SOUTH SHORE MOTORISTS
PARK
WHERE THE 'EL' BEGINS
-AND SPEED INTO BOSTON
16 MINUTES from ASHMONT
26 MINUTES from MATTAPAN
TO
WASHINGTON ST. UNDER

SAVE TIME IN AND OUT OF BOSTON
PARK
WHERE THE 'EL' BEGINS
14 MINUTES from EVERETT STA. to WINTER ST.
10 MINUTES from SULLIVAN SQ. to WINTER ST.
10 MINUTES from LECHMERE to PARK ST.

PARK
WHERE THE 'EL' BEGINS
WHEN DRIVING IN FROM THE SOUTH SHORE
16 MINUTES from ASHMONT
26 MINUTES from MATTAPAN
TO
WASHINGTON ST. UNDER

SINGLE-COLUMN NEWSPAPER ADVERTISEMENTS

railways showing a gain are the two railways operating rapid transit in New York City. Generally, it may be said that in those cities, including Boston, where rapid transit lines are in operation, riding has held up very well.

For the year ending June 30, 1930, compared to the previous trustee year, there has been an increase of $155,731.64 in rents for subway, tunnel and rapid transit lines due to additional rentals incurred on sections of the Dorchester rapid transit extension. In the coming year, still additional payments amounting to approximately $60,000 will have to be met.

CHANGE IN HARVARD-DUDLEY SERVICE

THE Railway put into effect on Saturday, July 26, a change in the Harvard-Dudley service with a view of obtaining greater regularity in service from both termini through better control of cars.

Car service is now operated from Harvard square to the Lenox street carhouse on Tremont street excepting during the very early and late hours of the day and excepting the night cars. A new all-day car service was inaugurated between Dudley lower level and Massachusetts station. All the cars will pass through Massachusetts station.

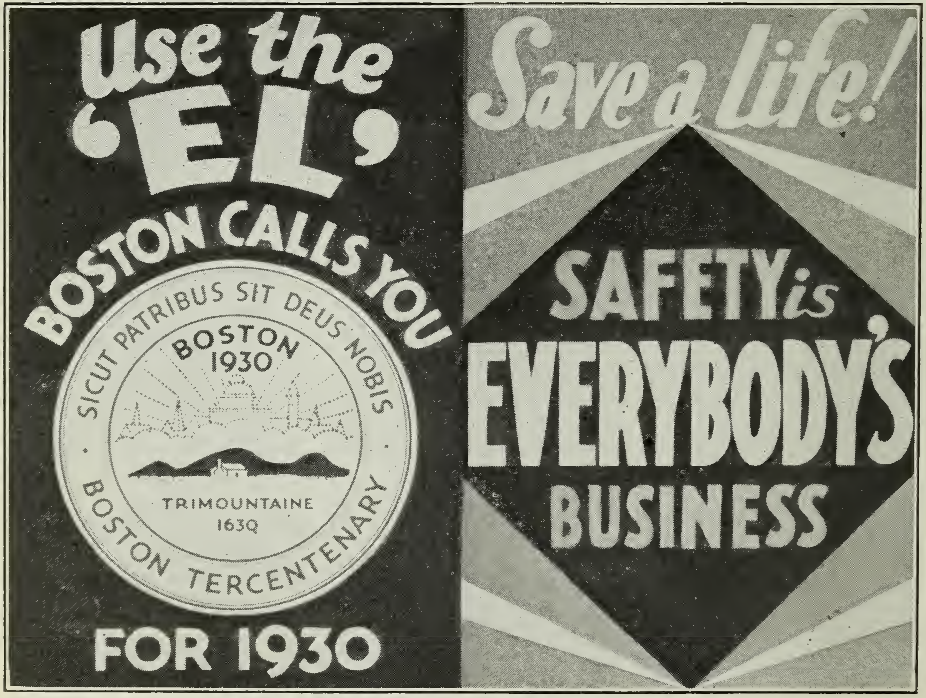
OPEN TERCENTENARY BOOTH

THE Tercentenary Committee of the City of Boston and the Boston Elevated Railway on Monday, August 18, opened an official booth to give visitors to Boston information on events relating to the tercentenary and also general information relating to places of historical interest, nearby pleasure resorts, means of transportation and any other information that visitors want.

The booth is located adjacent to the memorial shaft and faces directly the main entrance to the South Station. It will be open from 10:00 A. M. to 6:00 P. M. on weekdays. Michael J. Dockery, an employee of the Railway, is in charge of the booth. The location for the booth was granted by the Boston Terminal Company.

FORMER GENERAL MANAGER ELECTED

CHARLES D. EMMONS, at one time general manager of the Boston Elevated Railway, has just been elected president of the Hudson & Manhattan Railroad, effective Sept. 1. The Hudson & Manhattan operates under the Hudson River, between New York and New Jersey. Mr. Emmons' headquarters will be in New York City.



TWO MORE FINE DASH POSTERS

LONG-SERVICE EMBLEM WEARERS

ON July 1, 1930, exchanges of long-service emblems were made for four men entering the 50-year class, nine men entering the 45-year class, ten men entering the 40-year class, and twenty-two men entering the 35-year class, all in addition to the awards and transfers listed in the July issue of "Co-operation." There are now nineteen men on the active list and six pensioners in the 50-year class; fifty-seven active and seventeen pensioners in the 45-year class; 116 active and twenty-two pensioners in the 40-year class; and 223 active and twenty-eight pensioners in the 35-year class. The men transferred are as follows:

HAVE ENTERED 50-YEAR CLASS

T. Devine, Maintenance.
Asa W. Flanders, Treasury.
Denis Kelley, Transportation.
John P. Quirk, Transportation.

HAVE ENTERED 45-YEAR CLASS

James Bradford, Transportation.
James Burns, Transportation.
James Golding, Transportation.
A. J. Hawkes, Transportation.
L. T. James, Rolling-stock and shops
J. Leary, Maintenance.
P. J. Nevins, Rolling-stock and shops
J. J. Reynolds, Claims.
Joseph S. Trainor, Transportation.

HAVE ENTERED 40-YEAR CLASS

G. E. Beck, Maintenance.
J. J. Callahan, Rolling-stock and shops.
Michael Cody, Rolling-stock and shops.
P. H. Doane, Maintenance.
E. Goodine, Transportation.
Livingston Lohnes, Rolling-stock and shops.
Dennis Mahegan, Rolling-stock and shops.
M. Murphy, Maintenance.
R. G. Thompson, Transportation.
Silas Weatherbee, Transportation.

LONG-SERVICE EMBLEM

The other emblems are like the above except that the grounds are of different colors and there are different numbers of stars.

HAVE ENTERED 35-YEAR CLASS

Edwin Baker, Transportation.
Jeremiah Buckley, Transportation.
T. J. Connor, Maintenance.
William A. Ebbs, Transportation.
Thomas J. Galvin, Transportation.
John Graham, Transportation.
Adolph Gustafson, Transportation.
Edward J. Hartford, Transportation.
George H. Harvey, Rolling-stock and shops
Harry B. Hayward, Power.
Henry Heinstein, Transportation.
Patrick Kedian, Rolling-stock and shops.
Stewart Leary, Transportation.
John Mallard, Rolling-stock and shops.
Angus McCallum, Transportation.
Michael McCarthy. Transportation.
Hazen A. Ogilvie, Transportation.
George J. Snyder, Transportation.
John J. Sullivan, Transportation.
Edward W. Taylor, Transportation.
Andrew S. Thomson, Transportation.
William F. Warner, Transportation.

THE COVER PICTURE

On the front cover this month appears a view of the front of the home of the poet and Harvard professor, Henry Wadsworth Longfellow. The house is on Brattle street, Cambridge. It was built in 1759 by John Varral, a Tory, and purchased in 1793 by Andrew Craigie. Longfellow came into possession of the house soon after 1838. His daughter, Miss Alice M. Longfellow, now occupies it. The house is within easy reach of Harvard Station, Cambridge subway.

NEW BUS GARAGE IN ROXBURY

(Concluded from page 132)

gallons. The gasing and washing facilities will be so arranged that buses upon entering the lot can be fueled, washed and stored with a minimum of time.

Provision has been made whereby compressed air will be piped to convenient locations in the garage, for the inflation of tires and the operation of small tools. The air will be furnished at 150 pounds pressure from air compressors located in the central heating plant.

On the first floor of the auxiliary building there will be stock rooms, offices, oil and battery charging room, and toilets. On the second floor will be the bus operators' lobby, completely equipped, including a receiver's office; a garage repairmen's lobby, and toilet and washroom facilities for both operators and repairmen.

REGISTER ANY TIME

for

The A B C of the Motor Bus

The A B C of the Motor Car

Just notify the general manager's office of your desire to begin.

COMPARATIVE DIVISION OF RECEIPTS AND EXPENDITURES FOR THE YEARS ENDED JUNE 30

	1930	1929	1928	1927	1926	1925	1924	1923	1922
Total receipts	$33,597,151.90	$34,312,806.18	$35,009,933.28	$35,618,066.06	$35,087,845.89	$34,198,250.91	$34,262,009.46	$33,612,335.20	$32,698,965.01
Operating expenses									
Wages	16,002,331.74	16,295,105.56	16,826,418.23	17,108,189.09	17,534,387.50	17,108,826.50	17,218,039.47	15,024,348.04	14,920,406.05
Materials, supplies, etc.	2,724,241.19	3,064,407.87	3,155,788.61	3,422,294.20	3,349,367.41	3,164,261.04	3,165,430.27	3,149,687.89	3,056,520.80
Injuries and damages	920,099.51	1,210,168.54	1,191,690.87	1,200,313.79	760,440.65	649,131.12	789,098.53	700,740.79	476,844.02
Depreciation	2,851,914.59	2,847,900.44	2,814,526.88	2,970,707.64	2,533,773.15	2,496,000.00	2,250,000.00	2,004,000.00	2,004,000.00
Fuel (except gasoline for buses)	1,208,787.98	1,055,746.78	1,094,966.47	1,133,423.85	1,128,464.98	1,188,199.60	1,587,089.27	2,027,712.50	1,656,012.89
Total operating expenses	$23,707,378.01	$24,473,329.19	$25,083,391.06	$25,834,928.57	$25,306,433.69	$24,606,418.26	$25,009,657.54	$22,906,489.22	$22,113,783.76
Taxes	1,551,842.11	1,695,086.25	1,793,128.48	1,902,525.06	1,819,905.37	1,623,666.39	1,603,269.38	1,722,707.95	1,610,096.47
Dividends (including rent of leased roads)	3,137,738.60	3,139,874.35	3,149,857.26	3,155,110.88	3.165,449.57	3,173,836.74	3,182,020.41	3,186,048.02	4,155,997.46
Subway and tunnel rents	2,716,046.81	2,560,315.17	2,269,198.82	2,218,137.21	2,214,613.95	2,189,966.39	2,060,337.09	2,025,263.33	1,974,141.07
Interest on B. E. bonds and notes	2,467,444.66	2,538,583.55	2,553,097.18	2,515,714.25	2,532,590.89	2,576,651.75	2,479,762.27	2,277,051.15	1,483,786.91
Miscellaneous items	67,683.02	85,771.00	78,448.70	68,249.60	58,907.03	58,995.48	71,165.21	65,986.23	58,475.99
Total cost of service	$33,618,133.21	$34,492,959.51	$34,927,121.50	$35,694,665.57	$35,097,900.50	$34,229,535.01	$34,406,211.90	$32,183,545.90	$31,396,281.66
Loss or gain not including profit and loss items	$50,978.31	**$180,153.33**	$82,811.78	**$76,599.51**	**$10,054.61**	**$31,284.10**	**$144,202.44**	$1,428,789.30	$1,302,683.35
Profit and **loss** delayed items	50,978.31	180,153.33	812,706.23	137,259.76	32,359.07	51,865.43	144,202.44	**314,231.48**	82,528.09
Total **loss** or gain including profit and loss items	$00.00	$00.00	$895,518.01	$60,660.25	$22.304.46	$20,581.33	$00.00	$1,114,557.82	$1,385,211.44

	1921	1920	1919	1918	1917	1915	1910	Sept. 30, 1905	Sept. 30. 1900
Total receipts	$34,200,286.06	$32,671,515.53	$25,226,981.50	$19,480,022.08	$19,788,953.25	$17,886,549.64	$15,245,865.48	$12,741,569.30	$10,236,994.49
Operating expenses									
Wages	16,753,667.74	16,381,206.58	13,554,684.15	9,147,757.25	9,033,868.40	7,709,373.86	5,910,757.73	....	....
Materials, supplies, etc.	2,899,893.94	3,321,671.70	4,096,537.98	2,680,423.77	1,951,176.39	1,922,622.52	2,376,033.78	....	....
Injuries and damages	627,629.02	627,626.48	805,353.09	817,227.18	819,705.54	722,177.00	776,588.37	....	....
Depreciation	2,004,000.00	2,004,000.00	2,004,000.00	352,670.00	330,000.00	62,989.65	200,000.00	....	....
Fuel (except gasoline for buses)	2,399,277.71	1,996,717.21	1,901,596.75	1,381,957.20	947,412.50	870,820.30	822,497.54	....	....
Total operating expenses	$24,684,558.41	$24,331,221.97	$22,362,171.97	$14,380,035.40	$13,082,162.83	$11,287,983.33	$10,085,877.42	$8,617,653.04	**$7,068,110.24
Taxes	1,306,736.39	1,075,496.70	941,611.50	905,032.96	984,070.55	1,069,189.27	1,213,089.37	1,047,333.72	825,993.04
Dividends (including rent of leased roads)	4,196,533.56	4,011,535.96	3,947.349.57	2,905,611 60	3,622,482.28	3,638,655.75	3,030,168.15	1.233,199.43	1,157,130.00
Subway and tunnel rents	1,947,963.20	1,591,323.98	1,491,999.54	991,551.30	995,093.45	825,496.17	559,469.14	228,540.63	211,146.67
Interest on B. E. bonds and notes	1,483,625.54	1,593,257.58	1,423,142.14	1,238,373.55	1,138,655.88	1,049,785.12	556,000.00	779,757.76	498,569.89
Miscellaneous items	54,479.21	69,284.73	37,372.67	16,050.44	9,525.11	4,587.89			
Total cost of service	$33,673,896.31	$32,672,120.92	$30,203,647.39	$20,436,655.25	$19,831,990.10	$17,875,697.53	$15,444,604.08	$11,906,481.58	$9.760,949.84
Loss or gain not including profit and loss items	$526,389.75	**$605.39**	***$5,412,014.35**	....	....	....	....	....	....
Profit and **loss** delayed items	23,863.77	17,685.34	**3,485.78**	....	....	....	....	....	....
†Total **loss** or gain including profit and loss items	$550,253.52	**$17,079.95**	**$5,415,500.13**	**$956,683.17**	**$43,036.85**	$10.852.11	**$198,738.69**	$835,084.72	$476,044.65

† Not reported separately before 1919. **Includes $240.000.00 to Depreciation Reserve.

***Includes $435.348.46 back pay applying to May and June, 1919, but paid in October, 1919.**

TUMORS AND CANCERS

By a Member of the Staff
Massachusetts General Hospital

THE body is composed of many different kinds of organs. Each organ is made up of cells and these vary in type in the different organs. As these cells wear out, new ones are formed. Growth, then, is a natural process to provide new cells, to increase the size of the individual, and to repair injured tissues.

Sometimes, for unexplained reasons, this growth goes on faster than the old cells die. We have then a bunch of cells piled up into what we call a tumor. A wart is the simplest example of a tumor. Some tumors are, therefore, solid masses of cells, other are filled with fluid, and still others with greasy material.

Many of these tumors are harmless. They grow to a certain size and then stop. They may bleed, they may cause pressure on other structures and, therefore, make trouble, but they do not spread into other organs and usually do not cause death. These are called non-malignant tumors.

There are other tumors which do invade other organs. Sometimes they keep on growing in every direction into any tissue which lies in their path. They may get into a blood vessel, be sent in the blood to a distant part of the body, where they continue to grow. They may get into what is called the lymphatic system and spread to a group of glands near by where they continue to grow. These do endanger life, sometimes within a very short time. They are called malignant tumors or cancers. In every case the cancer is composed of cells like the organ in which it arises.

Some tumors which start as non-malignant tumors suddenly change into rapidly growing cancers. Certain types of cancer appear on the surface as sores or ulcerations. In this way the patient does not recognize the possibility of a tumor being present, as he sees or feels no bunch. Some internal tumors give no external evidence, but give such symptoms as pain, bleeding, indigestion, bowel obstruction, severe constipation, etc. Many cancers develop without any pain.

Non-malignant tumors should usually be removed, because absolute proof of their nature cannot be had until a microscopic study is made and because they may change into the more serious type of tumors. Malignant tumors, if taken care of early, can often be permanently cured. You cannot tell which yours may be. You must consult a doctor and let him decide. It is better to remove apparently harmless tumors than to let time show that they are harmful, for the treatment of cancer is a race against time.

The only successful methods of treating cancer or tumors are by operation, X-ray and radium. One type is best treated by one method, and another by another method.

There is nothing contagious about cancer. It is not inherited. It is not a blood disease. It is not a disgrace to have cancer.

There is no known medicine, taken internally or applied externally, which will cure cancer. Secret remedies are all fakes. Any remedy of any value is studied by the medical profession and the truth told to the doctors throughout the world. Nothing is patented or kept secret. Your doctor is your friend.

How Can We Improve the Service?

Suggestions by employees for improvement of service are always appreciated.

Write the General Manager whenever you have an idea which, after careful thought and consideration from every angle, you believe would be helpful and he will give it his personal consideration.

CHANGES IN THE RESERVE FUND

Fiscal Year 1929-30
July 1, 1929, $1,000,000

July	$285,903.19*	Jan.	$195.210.33†
Aug.	361,650.56*	Feb.	18,035.80†
Sept.	197.825.11*	Mar.	178,957.43†
Oct.	64,866.77†	Apr.	54.282.43†
Nov.	64.148.53†	May	45.824.02†
Dec.	286.824.84†	June	$113.749.60*

Profit and loss credit..........$50,978.31

Fiscal Year 1930-31
July 1, 1930, $1,000,000

July	$424,295.95*

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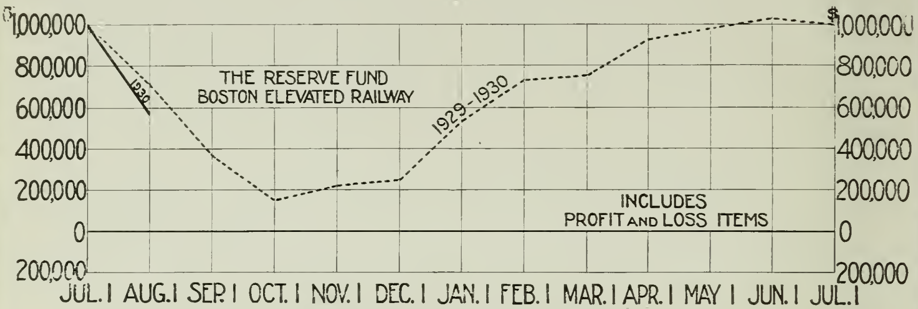
†Excess of revenue over cost of service.

*Excess of cost of service over revenue.



JULY OPERATION

	1930	1929
GENERAL FINANCIAL DATA		
Cost of service exceeded revenue	$424,295.95	$285,903.19
Operating revenue per car-hour (A.E.R.A. std.)	$5.42	$5.60
Operating revenue per car-mile operated	53.88c	55.96c
Average fare per revenue passenger	9.266c	9.257c
Ratio operating expense to operating revenue	82.59%	78.91%
PASSENGERS CARRIED		
Revenue passengers	24,716,984	26,097,393
Per cent 5c, 6¼c and 7c passengers	18.37%	18.75%
Revenue passengers per car-mile operated	5.617	5.849
OPERATING FACTS		
Trips operated	592,929	584,910
Car-miles operated:		
Rapid-transit lines	1,277,772	1,295,118
Surface, two-man	817,275	1,109,561
Surface, one-man	1,648,899	1,466,464
Sprinkler cars	....	1,047
Motor bus	656,888	589,091
Total miles operated	4,400,834	4,461,281
ACCIDENT DATA		
Accidents per 10,000 car-miles	1.47*	1.59*
Accidents per 10,000 bus-miles	1.72*	1.90*
Revenue passengers carried per accident	19,070	19,200
Average number of witnesses per accident	3.80	3.12
COMPLAINTS AND DEFECTS		
Complaints in regard to car service	32	8
Employees complained of by car riders	73	69
Car defects reported per 10,000 car-miles	2.2	3.9
INFORMATION ABOUT POWER		
D.c. kw.hr. output gross for month	15,700,600	15,788,000
Maximum kw. load	58,900	60,600
Tons of coal consumed for power	12,898	12,963
Lbs. of coal for power per d.c.kw-hr. at cars	1.845	1.844
Operating and maintenance cost of power, including depreciation:		
Per d.c.kw.-hr. for car service	1.28c	1.10c
Per revenue car-mile	4.86c	4.06c
Kw.-hr. per revenue car-mile	3.938	3.676

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*Does not include miscellaneous accidents or derailments.

August 23, 1930.

Edward Dana, *General Manager.*

BOSTON ELEVATED RAILWAY
CO-OPERATION

Volume 9 SEPTEMBER, 1930 Number 9

Places People Like to Visit

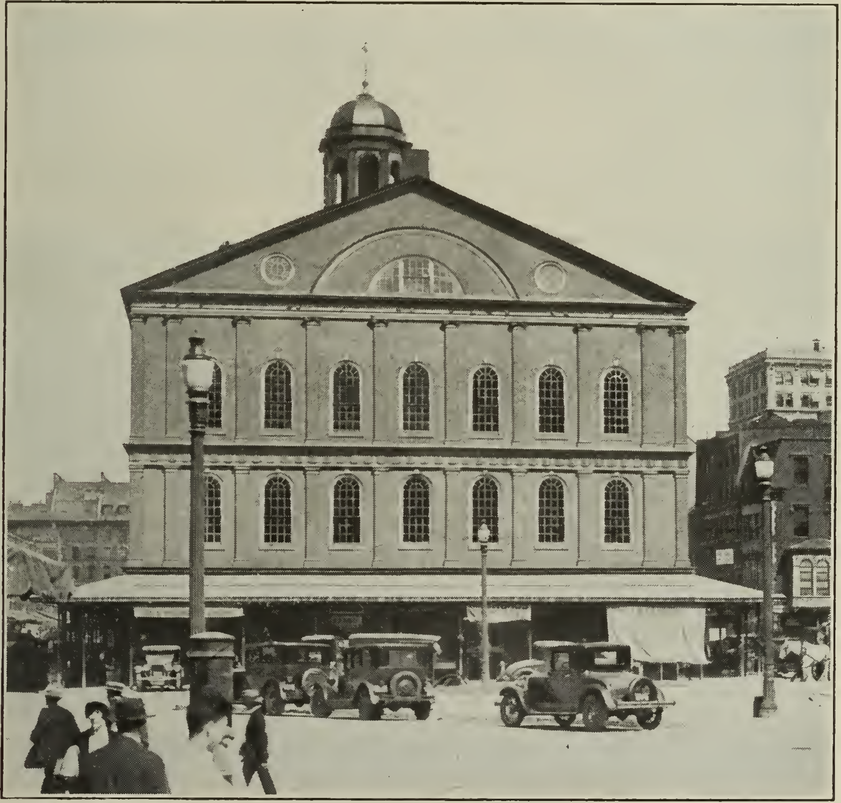


Photo by Dadmun

HISTORIC FANEUIL HALL
(See page 159)

To All "El" Employees

THE value to an individual of neatness in his personal appearance and surroundings is so obvious that it is a wonder that everybody is not neat.

There are people so rich or so talented that they "get by" in spite of careless habits, but they are the exception. A famous example is the great scholar and dictionary maker, Dr. Samuel Johnson.

Most of us, however, would not get very far in the world unless we paid reasonable attention to how we look.

Salesmen are probably among the neatest men with whom we come in contact from day to day. They know that they must make a good impression upon prospective customers before they open their mouths. If the "prospect" is displeased by the salesman's lack of a shave, or by his wrinkled clothing, or by his unshined shoes, the so-called "sales resistance" is greatly increased. In this case the salesman must overcome the "prospect's" prejudice against him, in addition to putting up his sales argument. In other words, the salesman must "sell himself" before he sells his goods.

The same principle applies all through life. We are selling ourselves (or failing to do so) to our employers, our customers and our associates. Neatness in appearance is a big factor in such selling.

Boston Elevated employees, I believe, are above the average in neatness; our cars are reasonably fresh and clean; we strive to present a creditable appearance. It is always possible to improve, however, and a little of what someone has called "the piano finish" never does any harm.

Edward Dana

BOSTON ELEVATED RAILWAY

CO-OPERATION

VOL. 9 SEPTEMBER, 1930 NO. 9

HELPING PATRONS TO USE THE "EL"

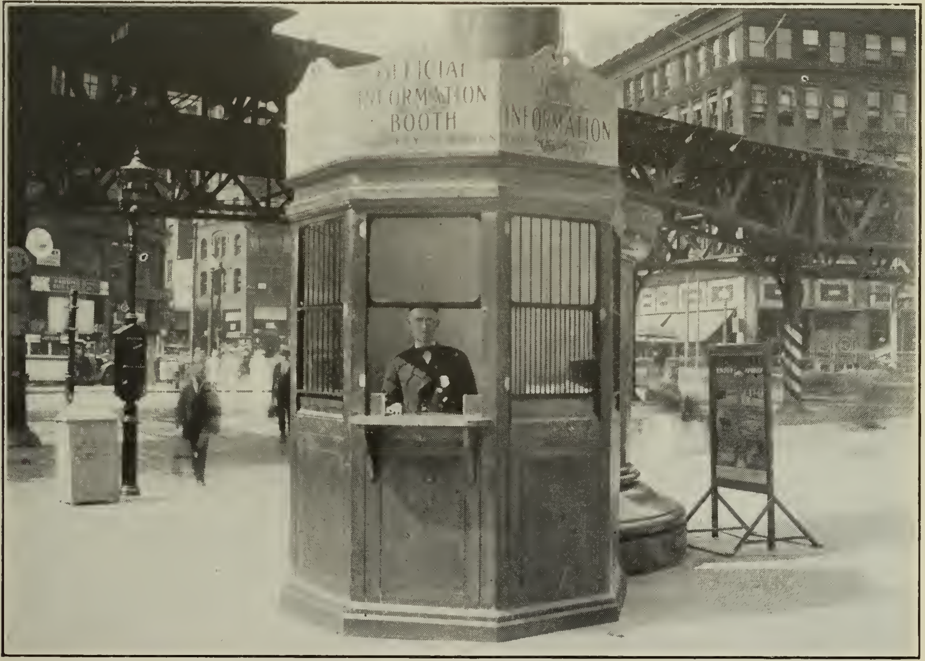
During This Tercentenary Year Unusual Efforts Have Been Made to Familiarize the Public With the Facilities Offered by the Railway—A Special Edition of the Guide Folder, New Signs in Stations and an Information Booth at South Station Are Among the Items of Interest

PARTLY on account of the expected large influx of tercentenary visitors this year the management of the Railway has made special efforts to acquaint patrons with the details of the service. The heartiest co-operation has been given the Boston Tercentenary Committee, both in advertising commemorative events and in furnishing "how-to-get-there" information.

To assist the patrons to make the best use of the Railway system and its facilities, attractive signs have been erected at strategic points, artistic colored posters have been carried on the cars, and newspaper and radio advertising has supplemented other forms of publicity.

Early in the summer Mr. Dana appointed a special committee to study the whole situation. The committee recommended numerous improvements in station signs, and the management has put many of these recommendations into effect. The committee worked with this principle in mind: The purpose of the signs is to help patrons to reach certain desired points. Many of these points are parks, historic shrines, railroad stations, wharves, etc. Signs were therefore designed to include reference to as many of these points of interest as possible.

Also, in view of the permanently attractive appearance of enamel signs, these were suggested for all cases where



TERCENTENARY INFORMATION BOOTH AT SOUTH STATION the information is not subject to frequent change. An observer of the "signing" in the Railway's stations cannot but notice the considerable increase in the number of such signs during the past few weeks. This carries farther the policy which has been followed for years by the Railway of installing enamel signs as rapidly as possible. The installation of these signs was hastened by the tercentenary celebration.

Directory Signs a Feature at Park Street

A permanent improvement in station signing, which has already proved most helpful to the public, is a pair of double-faced, enamel, illuminated directory signboards in Park Street Station. These replace the unused annunciator signboards which were located near the southbound through track in this station.

These directories are 6 feet high and 12 feet wide, flood-lighted by a row of shielded ceiling lights on each side of each board. The boards are made up of unit panels, of uniform size, each of which gives helpful information as to routes to be taken to reach certain points of interest. The directories thus supplement the work of the attendants in the near-by information booth.

Other New Station Signs

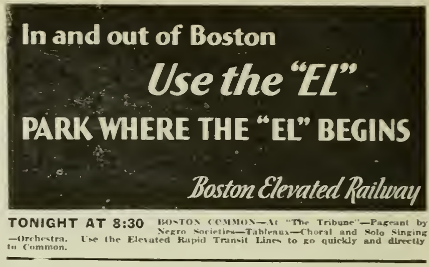
As suggested above, the purpose of many of the new station signs is to let the patron know the points of interest near the station or reached by way of each station. Thus at Park Street Station there are three new signs, reading respectively:

"Out to Tremont Street, Park Street, Boston Common and State House."

"Out to Tremont Street, Temple Place and Boston Common."

"Out to Tremont Street, West Street and Boston Common."

At the foot of the main stairway at South Station Under a sign, visible as passengers come down the stairway, has been installed. It reads: "Trains for Washington Station, connecting with trains for Forest Hills and Everett—Park Street Station, connecting with Tremont and Boylston Street subways—Kendall Square—Central Square—Harvard Square."



In and out of Boston

Use the "EL"

PARK WHERE THE "EL" BEGINS

Boston Elevated Railway

TONIGHT AT 8:30 BOSTON COMMON—At "The Tribune"—Pageant by Negro Societies—Tableaux—Choral and Solo Singing—Orchestra. Use the Elevated Rapid Transit Lines to go quickly and directly to Common.

A 2-Column "Ad" With Boston Week Information

On the other side of the same station is a sign reading (on right-hand side): To Bowdoin, changing to bus for Massachusetts General Hospital; (on left-hand side): To East Boston, changing at Maverick Station for Airport, Cunard Wharf, and Revere Beach."

Other new station signs have been provided, but these examples will serve to indicate the general purpose and plan of the signs.

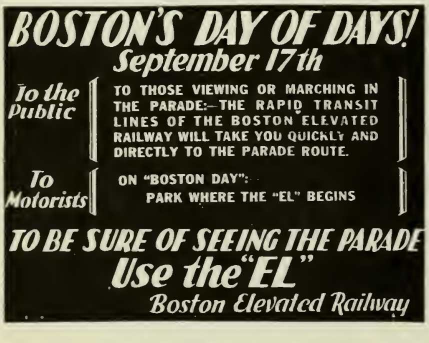
Information Booth Located at South Station

The information booth at Park Street has been so much appreciated by patrons since its installation that one of the first suggestions in preparing for the tercentenary visitors was the extension of the booth idea in the form of temporary booths for their especial benefit. Several sites for such booths were considered, but the only practicable one proved to be at South Station. One of the Railway's collectors' booth was refitted for outdoor use and installed in front of the main entrance to the station. The booth is in the path of main travel from the Station. It will be maintained until cold weather sets in.

From the South Station booth the same service is rendered as at the Park Street booth, and there has been a constant use of this service from the start. A photograph of the booth is reproduced in this issue. It is the result of co-operation with the Tercentenary committee and the Boston Terminal Company, which operates the South Station.

Circulating the Guide and Information Folder

A special Tercentenary edition of the Railway's guide and information folder was issued this year, the new feature being a picture map, in colors, of the central part of the "El" territory. Of



BOSTON'S DAY OF DAYS!

September 17th

To the Public: TO THOSE VIEWING OR MARCHING IN THE PARADE:—THE RAPID TRANSIT LINES OF THE BOSTON ELEVATED RAILWAY WILL TAKE YOU QUICKLY AND DIRECTLY TO THE PARADE ROUTE.

To Motorists: ON "BOSTON DAY": PARK WHERE THE "EL" BEGINS

TO BE SURE OF SEEING THE PARADE

Use the "EL"

Boston Elevated Railway

A Striking Newspaper "Ad"
Original was two columns wide

the folder the first printing was 100,000 copies, but so popular did it prove that an additional printing of 50,000 copies was necessary.

As the information booth at Park Street Station is the most important single center of distribution for the guide folder, a special illuminated sign was erected over this booth calling attention to the folder. This sign is double-faced, located directly above the booth, and lettered "Ask Here for 'El' Guide." The letters appear in brilliant red of the general style familiar through the illuminated signs now so popular.

Special Tercentenary Program Advertising

In all of its advertising plans this season the Railway has provided for suitable reference to Tercentenary program events and how to use the railway system in reaching the places where events are scheduled to occur. A comprehensive schedule of newspaper advertising has been carried out along the lines herewith illustrated. A special feature has been the listing of events in type below the block advertisements of the Railway.

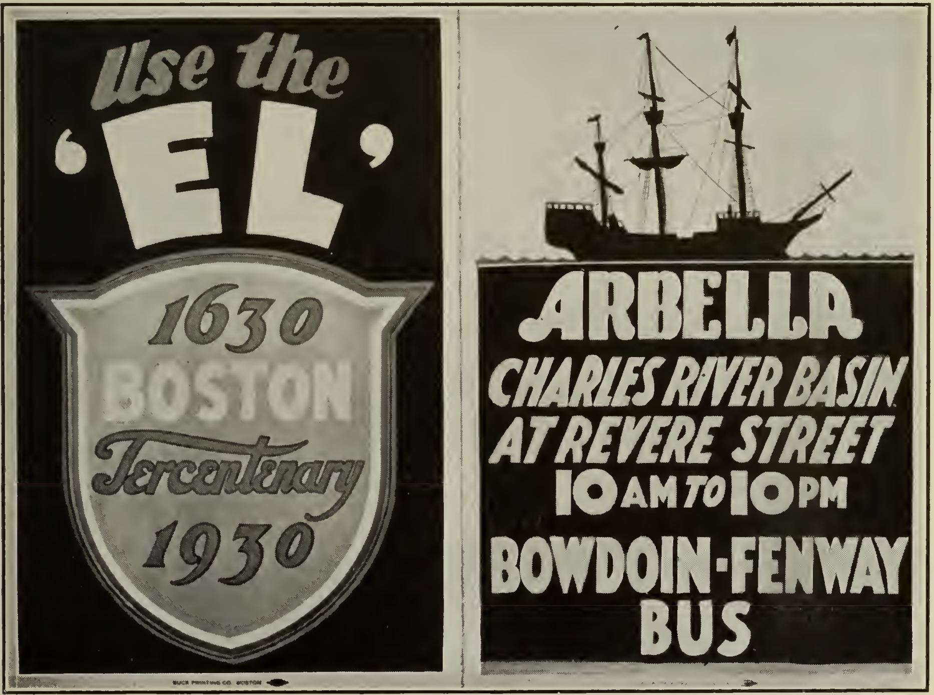
Boston Week and Boston Day were specially featured in the newspapers, on dash posters and elsewhere. An extra large issue of "El" News, both as to size and number printed, was placed in the boxes on rapid-transit cars on Sept. 14. This issue contained a complete program of events for the following week, prepared in co-operation with the Tercentenary Committee and distributed also in part by that committee.

The dash posters illustrated in this issue, showing the "Arbella" and the emblem reading "1630 Boston Tercentenary 1930" are typical of the way in which the valuable advertising space on the dashers was used in this campaign. A special poster was prepared to advertise Boston Day.

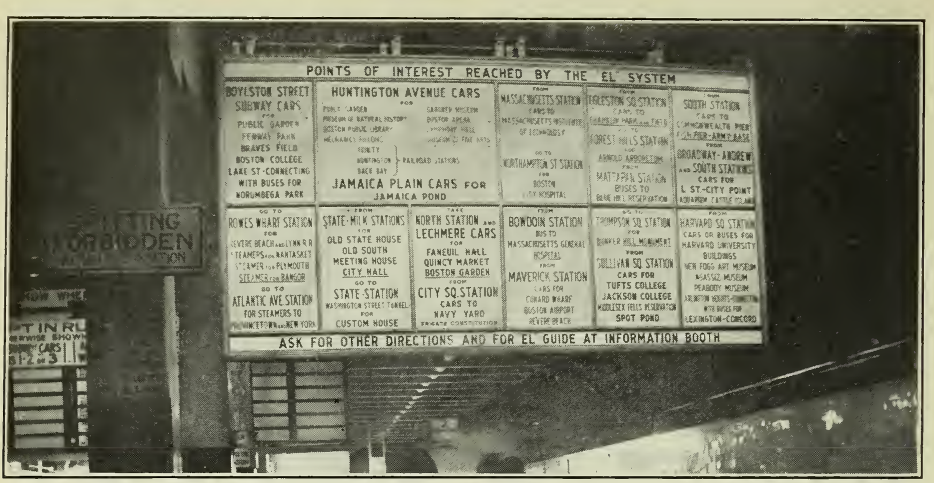
Other Advertising of the Railway

While interest naturally centers in the Tercentenary advertising this season, there has been some very interesting advertising work done to promote the general use of the Railway system. The Railway makes a practice of utilizing handbills, booklets and radio and newspaper announcements in calling attention to items of great interest to the public.

For example, in connection with the 30-day trial of the 5-cent fare on a large number of surface-car and bus routes, large numbers of nine different handbills, giving details of the plan, were distributed on cars and buses in nine districts. Booklets covering the whole system, to the number of 50,000, were printed and distributed through the chan-



DASH POSTERS WHICH ATTRACT ATTENTION


POINTS OF INTEREST REACHED BY THE "EL" SYSTEM
BOYLSTON STREET SUBWAY CARS FOR PUBLIC GARDEN FENWAY PARK BRAVES FIELD BOSTON COLLEGE LAKE ST-CONNECTING WITH BUSES FOR NORUMBEGA PARK
HUNTINGTON AVENUE CARS FOR
JAMAICA PLAIN CARS FOR JAMAICA POND
MASSACHUSETTS STATION
NORTHAMPTON ST STATION
FOREST HILLS STATION
MATTAPAN STATION
SOUTH STATION
BROADWAY-ANDREW AND SOUTH STATIONS CARS FOR L ST.-CITY POINT
ROWES WHARF STATION
ATLANTIC AVE. STATION FOR STEAMERS TO PROVINCETOWN AND NEW YORK
STATE-MILK STATIONS FOR OLD STATE HOUSE OLD SOUTH MEETING HOUSE CITY HALL
STATE-STATION
CUSTOM HOUSE
NORTH STATION AND LECHMERE CARS FOR FANEUIL HALL QUINCY MARKET BOSTON GARDEN
CITY SQ. STATION CARS TO NAVY YARD
BOWDOIN STATION
MAVERICK STATION
THOMPSON SQ. STATION
SULLIVAN SQ. STATION CARS FOR TUFTS COLLEGE JACKSON COLLEGE
SPOT POND
HARVARD SQ STATION CARS OR BUSES FOR HARVARD UNIVERSITY BUILDINGS
LEXINGTON-CONCORD
ASK FOR OTHER DIRECTIONS AND FOR EL GUIDE AT INFORMATION BOOTH
SPITTING FORBIDDEN

ILLUMINATED DIRECTORY BOARD AT PARK STREET STATION

nels used for the guide folder. The availability of these booklets was announced over the radio on Sept. 14. The plan was, of course, covered in general in the newspaper advertisements.

Large poster cards were issued this summer in co-operation with the Eastern Massachusetts Street Railway advertising Revere Beach and Nantasket Beach. The Railway also posted large cards calling attention to the East Boston Airport and chartered bus service.

Clerestory rack cards were also used to advertise beauty and historical spots reached by the "El." Special advertisements in the Boston Garden official program and in the Harvard Athletic Association News have been used in the attempt to induce residents and visitors to use the rapid-transit lines to reach the Garden and Stadium.

Employee Co-operation Necessary

In all of this publicity work the employees of the Railway must be depended upon to give the advertising its full value. They have numerous opportunities to supplement the printed word, the picture and the radio announcement. Familiarity with the advertising pro-

(Please turn to page 155)

AN EFFECTIVE ADVERTISEMENT OF THE GUIDE FOLDER

"EL" NEWS NOTES

Items of Interest Regarding Recent Incidents With Which All Employees Should Be Familiar

5-Cent Local Rides

FOR the past month the experimental local 5-cent ride plan has been in operation. Under the new system it was estimated that from 80 to 90 per cent of the riders availing themselves of the reduced fare would pay a single cash fare of 5 cents in the farebox without the use of tickets, warrants or coupons. As stated elsewhere in this issue, the public has been furnished with handbills and booklets giving details of the plan in order that the full benefits of the plan may be obtained.

FOR the convenience of persons using the Bay View bus line operating between the corner of O and Eighth streets and the corner of Kneeland and Washington streets, buses on this route will be operated through the Broadway surface station. This change will enable riders to make a direct connection with the Dorchester rapid transit without crossing street traffic.

In order to make this change possible, 16 new buses of the metropolitan type especially equipped with a front left door directly opposite the front right door have been ordered. This door will allow the passengers to board and leave the bus on the center platform. Moreover, the roadbed of the inbound and outbound tracks and the tracks within the station will be raised to the station level by means of a concrete filling. The total expenditure involved in equipping 16 new buses with special doors on the left and in raising the roadbed will be about $10,000.

Due to the impossibility of the buses making a turn beyond Broadway station, slight changes will have to be made in the route of the short line service now operating between the corner of K and Eighth streets and Broadway during rush hours only. When buses are operated through the station this service in the morning rush hour will go over the Broadway bridge, Albany street and the Dover street bridge, then the regular route. During the evening rush hour this operation will be reversed, that is, buses will go by way of Dover street bridge, Albany street and the Broadway bridge, through the station, then regular route.

Good Work at Carhouse

THE carhouse employees at North Cambridge are entitled to commendation for the good work which they did in protecting the Railway property on the occcasion of the severe fire in the F. H. Newton Company's factory on Sept. 5. This factory is located in the rear of the North Cambridge carhouse and the fire burned it to the ground.

Six lines of hose were used to protect

(Please turn to page 156)

NORTH CAMBRIDGE CARHOUSE EMPLOYEES HELPED AT THIS FIRE

CHANGE IN PENSION LIST

In the August issue of "Co-operation" the statement was made that the pension list, covered by the June report of the pension committee, comprised 488 names, a decrease of one as compared with the preceding report. In July there was a net increase of three names, to a total of 491. The changes were as follows:

Added since last report:

John D. Henley, carpenter
Geo. B. Longfellow, painter.
Luke J. Riley wireman.
Coleman Lydon, paver.
M. J. Mahoney, operator.
Martin Kane, paver.
T. D. Coursey, toolwagonman.
Wm. W. Baker, hoist. engr.

Reported as having died since last report:

A. E. Alls, gateman.
P. J. Gannon, machinist.
Peter Welch, spec. cableman.
John Doyle, motorman.
Edw. Fenerty, motorman.

AUTOMOBILE OPERATING COSTS

While automobile owners as a rule do not think much about the cost of operating their machines and look upon their automobile transportation as a necessity or a justifiable luxury regardless of cost, a table like the one printed below cannot but be of interest. Coming from a research department of an educational institution, the data must be received as unbiased.

REVENUE PASSENGERS AND TOTAL PASSENGERS

The accompanying chart is a revision of one printed in the issue of "Co-operation" for October, 1927, page 154. The lower part of each bar represents the number of revenue passengers, which shows a slight falling off during the past three years. This loss is due largely to the increasing use of the automobile. The next section on each bar represents the number of passengers using paper transfers, which has not varied much for several years.

From 1909 to 1925 an estimate of the number of bodily transfers is represented by the uppermost section of each bar. As there is no record of such transfers, counts had to be made to be used as the basis of estimates. This practice is no longer followed. It is of interest to note, however, that the total number of transfers, including both types, is about equal to the number of fares collected. In other words, the average passenger transfers once in making his journey.

AVERAGE COST OF

Compilation By Engineering Experim

Based on detailed cost records covering about 800 automobiles operated in various parts
fleet operators who purchase supplies at wholesale, and the items of gasoline and

Type of car	Light 4[2] Average	
Gross wt., tons (Approx.)	0.86	
Items[1]	Dollars per year	Cents per mile
1. Gasoline at 20 cents per gal.	147.40	1.34
2. Oil	27.50	.25
3. Tires and tubes	66.00	.60
4. Maintenance	170.50	1.55
5. Depreciation	137.50	1.25
6. License	12.00	.11
7. Garage at $4 per month	48.00	.44
8. Interest at 6 per cent	30.00	.27
9. Insurance (fire, theft, tornado, liability)	23.00	.21
Total	661.90	6.02
Annual mileage	11,000	
Average miles per gallon gas	14.95	

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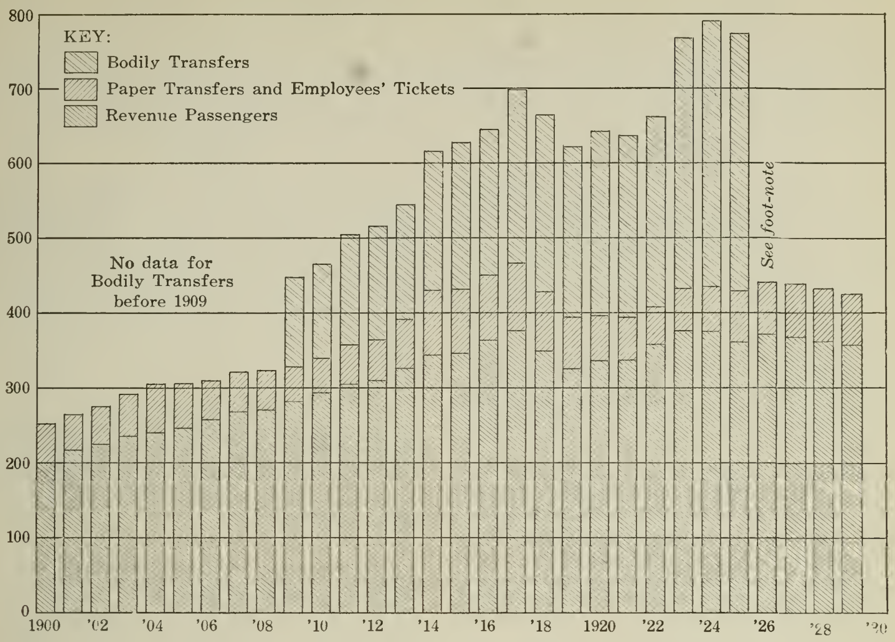
[1] 1. From reported costs reduced to uniform price per gallon.
2. Average reported.
3. Based on average retail prices of tires.
4 and 5. Reported for vehicles that had been operated for a period and then sold.
6. At the Iowa rate, i.e., 40 cents per cwt. plus 1 per cent of list price.



REVENUE PASSENGERS, TICKETS AND TRANSFERS

Data for nine months of 1910, in table, proportionately increased to cover full year. No estimate of bodily transfers made since 1925.

OMOBILE OPERATION

tation, Iowa State College, Ames, Iowa

United States and an average of 11,000 miles per year. The reports were largely from
have been converted to retail price basis.

lium 4[3]	Heavy 4[4]		Light 6[5]		Medium 6[6]		Heavy 6[7]	
verage ..	Average		Average		Average		Average	
1.08	1.4		1.41		1.66		1.86	
Cents per mile	Dollars per year	Cents per mile	Dollars per year	Cents per mile	Dollars per year	Cents per mile	Dollars per year	Cents per mile
1.14	144.10	1.31	149.60	1.36	167.20	1.52	157.30	1.42
.17	17.60	.16	19.80	.18	22.00	.20	18.70	.17
.65	77.00	.70	82.50	.75	88.00	.80	99.00	.90
1.90	227.70	2.06	214.50	1.95	236.50	2.14	278.30	2.53
1.40	172.70	1.57	192.50	1.74	229.90	2.09	282.70	2.57
.14	22.00	.20	22.00	.20	26.00	.24	30.00	.27
.44	48.00	.44	48.00	.44	48.00	.44	48.00	.44
.38	60.00	.55	60.00	.55	78.00	.71	95.70	.87
.20	23.00	.21	23.00	.21	28.00	.26	30.00	.28
6.42	792.10	7.20	811.90	7.38	923.60	8.40	1039.70	9.45
11,000	11,000		11,000		11,000		11,000	
17.53	15.29		14.68		13.19		14.02	

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[2] Light 4—Fords, all types.
[3] Medium 4's—Chevrolet, Star, Overland.
[4] Heavy 4's—Dodge, Nash, Maxwell, Chrysler, Oldsmobile, Hupmobile.
[5] Light 6's—Essex, Chrysler, Oldsmobile, Studebaker, Oakland.
[6] Medium 6's—Chrysler, Buick, Jewett, Studebaker, Nash, Chandler.
[7] Heavy 6's—Buick, Studebaker, Hudson, Paige, Reo.

KNOCKS AND BOOSTS—A COURTESY CLINIC

BELOW are given some excerpts from complaints and commendations which are received at the Railway offices from time to time. They are of value in suggesting the factors in the contacts between employees and the public which appeal to the patrons of the Railway as important.

KNOCKS

A physician reports that as he entered a car the conductor put his hands on him and said, "Move up in the car." He states that he told the conductor that it would be sufficient for him to be spoken to, but that he wished to be spoken to properly and that he would not stand having anybody put his hands on him. He says, further, that the conductor replied, "Who do you think you are?" He retorted that it made no difference who he was but he wished to be treated properly.

COMMENT. One of the most difficult tasks of the conductor is to get patrons to move up in the car. Sometimes it takes a lot of patience when one gets no response to his requests to do so. In this case, however, it appears from the patron's statement that the conductor was at least overzealous.

A patron writes that he had occasion to change cars at Northampton and Washington streets, and that he presented his transfer on a City Point car, along with a dime for his wife who had joined him at the transfer point. After the car had gone some distance the conductor told him that the transfer was invalid, having been issued on a line which did not transfer to this one. The passenger says that this was done in a manner to embarrass him before the other passengers.

COMMENT. Investigation shows that the conductor was right in refusing this transfer which had evidently been wrongly punched. He is gentlemanly in his manners and had never had a complaint lodged against him before. In spite of this, however, the customer thought that he had a grievance, which indicates that the situation might have been handled more tactfully.

While stating his belief that the case was exceptional. a business man reported apparent discrimination on the part of a conductor against his wife and other women patrons in giving change and in other ways.

COMMENT. While investigation showed that the conductor in question had been suffering from ill health and that he did not realize such discrimination as mentioned, the incident illustrates the importance of taking the patron's point of view in all such cases.

BOOSTS

A patron living in Roslindale writes: "I am a lame little lady and desire to call your attention to the kindness and consideration of one of your employees. He not only helped me to the door of his car, but off the car as well in the kindest possible way. On that same trip I saw him help a tottering old lady out of the car also."

COMMENT. Assisting the aged and infirm is one of the privileges of the car operator. Any normal man feels a glow of satisfaction after doing a kind act, to say nothing of the good will that this act helps to build for the Railway which employs him.

A Brookline Railway customer, in returning a dime advanced by a conductor, writes: "It seems that I almost never observe anything now but the most careful driving and, on the part of your conductors, such care and consideration for passengers that it sometimes amazes me. . . . I offer my congratulations on the men in your services, many of whom go out of their way to be helpful to passengers."

COMMENT. This patron "hit the nail on the head," so to speak, in stating that many "El" men go out of their way to be helpful to passengers. This means doing more than the job requires. The friend from Brookline paid the operating force a fine compliment.

A patron who rides home on a certain "El" line regularly was absorbed in his newspaper recently as the car approached his stop. Remembering the street where this customer had left the car two or three times before, the conductor called the name of the stop several times, each time a little louder. Finally he got the customer's attention and as the latter got off the car he thanked the conductor cordially for his courtesy. In speaking of this incident the customer expressed surprise that the conductor remembered him and his stop although he had ridden with this conductor only two or three times.

COMMENT. This extra service made a distinct and pleasing impression upon the customer. He will undoubtedly talk about the incident to his friends, thus impressing them with the watchfulness of "El" employees.

WHAT HAPPENED IN EARLIER YEARS IN SEPTEMBER

A Year Ago

The use of 6¼-cent tokens for local fare was inaugurated. (On the 14th.)

Two Years Ago

The Dorchester rapid-transit was extended to Ashmont, and the Ashmont automatic power substation, containing two 3,000-kilowatt rotary converters, was put into commission. (On the 1st.)

The Dorchester garage was opened. (On the 1st.)

Five Years Ago

Mr. Dana spoke on safety over WEEI under the auspices of the Big Brother Club. (On the 17th.)

Andrew Marshall was appointed a member of the board of trustees. (On the 23rd.)

Ten men from car, train and bus service left for the 14th National Safety Congress as a reward for success in an accident-reduction competition. (On the 28th.)

Twenty-Five Years Ago

Collectors were transferred from the jurisdiction of the treasury department to that of the rapid transit division. (On the 30th.)

Sixty-Two Years Ago

The Brookline and Back Bay Street Railway was sold to the Metropolitan Railroad. (On the 15th.)

Seventy-Five Years Ago

Construction of the Cambridge Railway was begun. (On the 1st.)

FOOT STRAIN

By a Member of the Staff
Massachusetts General Hospital

At the beginning of the World War men were refused entry into the Army if they had flat feet. Army surgeons, as well as others, now realize that a flat foot may be a perfectly strong kind of foot. The savages of Africa today have flat feet. These men have strong feet because they go barefoot and use their feet in the way Nature intended.

When it is put in a shoe, however, the flat foot may become a strained foot. The important thing is, not, is a foot flat or high, but is it strained? Any type of foot may become strained whether the arch is high or low, but generally speaking the flat foot is more likely to give trouble than the one with a high arch. There are several things that alone or together may cause foot strain:

1. Poorly fitting shoes that cramp the bones of the foot and stop the normal circulation.
2. Conditions such as varicose veins which impair the circulation.
3. Over-exercise of the feet, as when a person changes from a sitting job to one which keeps him on his feet all the time.
4. Illness, which weakens the muscles all over the body.
5. Overweight, which puts extra strain on the feet.
6. Poor posture, which throws the body weight incorrectly upon the feet.

What are the symptoms of foot strain? Pain may occur along the long arch of the foot which runs from the heel to the base of the toes. It may also occur in the short arch which runs across the foot at the base of the toes. The pain usually appears as soon as a person gets on his feet in the morning, then it lets up a little and finally gets worse towards the end of the day. The foot gets hot and sweats easily. It may be puffed and swollen and particularly around the ankle. It is often tender to touch.

There are several ways of curing foot strain. Adhesive tape strapping gives temporary relief only. Arch supports are often necessary for a time. The shoe is frequently at fault and must be changed. The muscles can be strengthened by exercises. Postural training and exercises which teach a person to stand properly will relieve the feet of a good deal of unnecessary strain. Which of these things and how many of them are needed, you must find out from your doctor.

HELPING PATRONS TO USE THE "EL"

(Concluded from page 150)

gram on the part of all is highly desirable and for that reason the management has made a practice of familiarizing the whole personnel with the efforts made along advertising lines. In earlier years small-scale reproductions of newspaper advertisements have been posted on bulletin boards and reprinted in "Co-operation," as far as space limitations would permit. From month to month, in recent issues, newspaper advertisements, posters, etc., have been presented. A glance back through these issues will give one a good picture of what is being done.

"EL" NEWS NOTES

(Concluded from page 151)

the Railway's property, three to wet down the carhouse roof, one to protect the rear of the carhouse and two to wet down the cars in the yard until they were removed. After the cars were removed from the yard, three lines of hose were pulled across the Boston & Maine Railroad tracks and streams were played directly on the fire, assisting the fire departments of several municipalities.

Sixteen men in the carhouse crew were engaged in this work. After the fire was under control they returned to their regular work. The carhouse was damaged very little, the damage consisting only of the washing off of some gravel from the roof in several places.

ON Monday, July 21, the Railway inaugurated a new week-day bus service between the corner of Northampton and Washington streets and the corner of Arlington street and St. James avenue.

The route of the new bus is Washington street, Massachusetts avenue, Columbus avenue to Arlington street, returning via St. James avenue, Berkeley street, Columbus avenue, Massachusetts avenue to Washington street. The new route furnishes a link between the main line elevated and the Back Bay-Park Square-Columbus avenue section.

The first bus is being operated from Washington and Northampton streets at 6:30 a.m., then 6:45 and 6:55 and every ten minutes up to and including 9:15; then 9:30 and every 20 minutes up to and including 3:30 p.m.; then 3:45 and every ten minutes up to and including 6:35; then 6:50, 7:10, 7:30 and 7:50 p.m. The fare is the regular rate with transfer for connections at Northampton and Washington streets for the surface and the elevated, and at Arlington street for the subway and the West End bus, and the local rate without transfers.

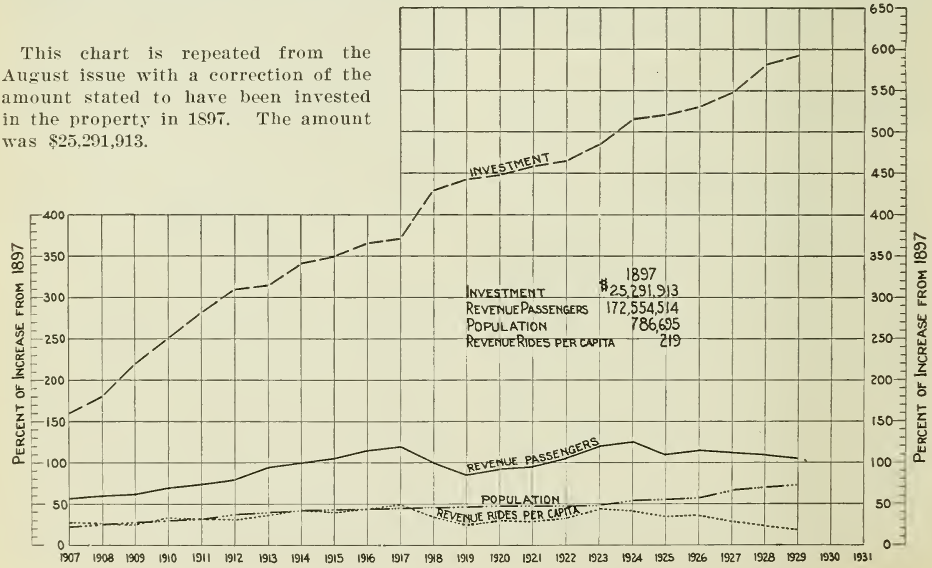
How Can We Improve the Service?

Suggestions by employees for improvement of service are always appreciated.

Write the General Manager whenever you have an idea which, after careful thought and consideration from every angle, you believe would be helpful and he will give it his personal consideration.

LONGFELLOW HOUSE

The home of the famous poet and professor at Harvard, Henry Wadsworth Longfellow, at 105 Brattle street, Cambridge, which was shown on the front cover of the August issue, is occupied by the family of Mrs. Annie Longfellow Thorp. Miss Alice M. Longfellow, whose name still appears in the telephone directory, and who was mentioned as the occupant of the house in the same issue, died Dec. 7, 1928, at the age of 78 years.



This chart is repeated from the August issue with a correction of the amount stated to have been invested in the property in 1897. The amount was $25,291,913.

THIS CHART COVERS A PERIOD OF TWENTY-FIVE YEARS

EVERYDAY ECONOMICS*—X

This in a continuation of the interesting series of articles by Dean J. E. LeRossignol, Ph.D., LL.D., of the University of Nebraska. The dean has the faculty of putting this important subject into concise, interesting and authoritative form. In this installment he covers more of the "Factors of Production" which he began in the April issue. We are fortunate to have the privilege of reprinting these valuable articles.

THE FACTORS OF PRODUCTION—CAPITAL

Labor and land, man and nature, are the primary factors of production; but without tools and other capital, practically nothing could be produced, and man could not live at all, except in the tropical forest.

Capitalistic production is indirect or roundabout, because, instead of attacking nature with tooth and claw, as the lower animals do, man takes the time and trouble to make a bow and arrow, a fish-hook, a canoe, a hatchet, or a needle, with which he can get far more food and make better things than he could with his unaided hands.

For this reason, man is often called a tool-using animal, and his advance in civilization has been largely due to the use of tools and machines. A machine, of course, is a complicated tool.

But there are other forms of capital, besides tools and machines. Instead of using land as nature has given it, man clears, cultivates, and improves it in many ways. Therefore, the availability and mellowness of land, fences, drains, irrigation works, buildings, and all that man has added to raw land are forms of capital.

So, also, are domestic animals, vehicles, railways and rolling stock, ships, telegraph and telephone equipment, gold and silver money, merchandise, and wealth of every other kind used for further production.

In fact, business men regard land itself as capital, as it is productive wealth, and there is little objection to this, provided that we do not lose sight of the distinction between land as a gift of nature and other forms of capital, which have been created by man.

Capital is a great fund or stock of wealth, which, with the help of labor, yields from day to day the necessaries, comforts, and luxuries of life, which are our real income.

So it is most important that this great source of income should be as large and as active as possible, in order that it may yield the largest possible income.

Idle lands, mines, factories, machines, railways, ships, and other capital goods neither feed, clothe, nor shelter anybody; but, when active, under intelligent direction, they render all of these services.

Production, then, demands two things: first, that individuals and business concerns save as much as possible, in order that the supply or stock of capital may be created, maintained, and augmented; second, that labor and capital work together harmoniously, so that the wheels of industry may be kept going and the national income may be as large as possible.

THE FACTORS OF PRODUCTION—THE ENTERPRISER

Strictly speaking, there are only three main factors of production—labor, land, and capital—for the enterpriser is only a particular kind of laborer or worker.

But as he plays the leading part on the business stage, and as his profits are so large a share of the national income, he deserves to be called a fourth factor of production.

There are two chief kinds of enterpriser: the small proprietor, such as a farmer or a merchant; and the large stockholder of a company, who is usually a director, and may be manager as well.

The typical American farmer is landowner, capitalist, laborer, and enterpriser, all in one.

According to his ability and means, he determines the quantity and quality of land to be farmed; the variety and rotation of crops; the number and breed of horses, cattle, swine and poultry to be kept; the buildings to be erected; the machinery to be used; the storage and marketing of crops and animals; the short- and long-time credit to be obtained; and a thousand and one other matters, large and small, that belong to the management of a successful farm.

It is no child's play, nor a work that can be done by every farm laborer, but an enterprise requiring more than ordinary strength of body and mind, scientific knowledge, experience, insight, imagination, judgment, courage, determination, patience, economy, and other mental and moral qualities, backed by sufficient funds and a fair share of good luck.

It is seldom that all of these qualities are found in a single person, and, therefore, really successful farmers are by no means common.

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*Copyright by A. W. Shaw Company.

So, also, with merchandising, manufacturing, banking, and other kinds of business. Somebody must take command, assume responsibility and risk, and carry on as well as may be.

And as difficulties and risks abound, failures are many and successes are few, and the survivors are, as a rule, those best adapted to the conditions of the ever-changing environment.

In a large corporation, the functions of the enterpriser are seldom centered in a single proprietor, but are none the less performed by one person or another.

In some cases, most of the capital is supplied by the bondholders; most of the risk is taken by the stockholders; most of the responsibility is with the controlling stockholders and the directors; while the administration is in the hands of the manager, though shared by subordinate officials.

And yet we have our Hills, Harrimans, Carnegies, Armours, Rockefellers, Guggenheims, Morgans, and Fords; so that the captains of industry are still in the field. Indeed, it is safe to say that the organization of our great business corporations will never be so perfect that they can run automatically, without a great personality behind the machine.

NINTH ANNUAL EDUCATIONAL PROGRAM

Popular Courses Will Be Continued and a Few New Ones Introduced. "Edison Light" Offers Co-operation

FOR the ninth successive year the Railway is offering to all employees the opportunity to enroll in educational classes to help them improve themselves "on the job." As the general manager states, in the introduction to the program now being distributed to all employees: "Modern progress is so rapid that the schooling obtained in youth cannot be depended upon for the requirements of advancing years. In these days we must be 'on our toes' to meet the demands of the times. 'El' employees are showing their appreciation of the fact that the thinking man or woman is the one who is making the most of the every-day job and preparing for possible advancement."

For this season the number of courses offered is not large, and the list includes only those which have promise of immediate benefit in every-day work or in broadening the mental horizon. A brief summary is given below:

Transportation Problems. Leader, J. L. Troy, supervisor of safe operation. There will be ten talks by specially qualified speakers in this course.

Customer Contacts, or Transportation Salesmanship. Leader, Everett A. Kelley, assistant to the superintendent of transportation. He will also be assisted by two or more specialists.

First-Year Foreman Conferences. Leader, J. A. Griffin, supervisor, Div. 3. All men either in supervisory positions or who, ambitious to prepare themselves for such positions, desire to gain a comprehensive view of supervisory problems, are invited to enroll.

Second-Year Foreman Conferences. Leader, John J. Sullivan, inspector, R.T.L. This series is open to men who have completed the first-year foreman conferences or who, having partly completed them, will be admitted while completing them.

Third-Year Foreman Conferences. Leader, E. O. Otis, Jr., industrial service advisor, Associated Industries of Massachusetts, and H. H. Norris, educational advisor. This series is open to men who have completed the second-year foreman conferences, or who, having partly completed them, are admitted while completing them. This series deals with "El" economics, following the general topics which have proved so highly interesting to the men during three successive seasons. The discussions are practical applications of familiar principles to every-day work.

Fourth-Year Foreman Conferences. Leader, Prof. W. G. Sutcliffe, Boston University College of Business Administration, and H. H. Norris, educational advisor. Open to officials of the Railway and to men who have completed the third-year foreman conferences, or who, having partly completed them, are admitted while completing them. This series, held for two seasons, has proved to be just what the men who took it felt they needed to understand our business better.

Post-Graduate Course for Foremen. Leader, T. A. Dunbar, chief clerk, department of accounts. This course is open to officials of the Railway and to men who have completed the fourth-year foreman conferences, or who, having partly completed them, are admitted while completing them. This series will give an unusual opportunity to become familiar with the most interesting problems from the business end of the "El" management.

Public Speaking. Under auspices of Division of University Extension. Leader, E. A. Sullivan, head of public speaking department, Rindge Technical School. This course is especially recommended to those who wish to develop their general capacity for logical thinking and lucid expression.

Effective Speech. Leader, H. H. Norris, educational advisor. Open to those men who took the course by Prof V. A. Ketcham, of Ohio State University, in earlier years. These reviews of Prof. Ketcham's course emphasize the principles which he explained and apply them to every-day requirements.

Debating. A new course under the auspices of the Division of University Extension. Leader, Prof. Newell C. Maynard, of Tufts College. This course is especially recommended to those who have made a general study of public speaking, but is open to all employees. Interest in debating is on the increase, and this course will culminate in the debate with employees of the Boston Edison Company next spring.

Traffic Analysis and Equipment. Leader, H. H. Hile, research engineer. This course will cover traffic analysis in theory and practice, increasing of schedule speed with resultant betterment of service, and research and equipment as related to these topics.

The Forum. Leader, Edward Dana, general manager. This is the monthly general meeting for all employees. Speakers of national fame will discuss such topics as aviation, organized labor and education, the health of employees, public relations and the electric railway industry.

Edison Courses. Open to all "El" employees. The Edison Company has invited Elevated men and women to participate in the following courses:

Modern Chemistry. P. F. Baggish, B.Ch.E., Edison standardizing and testing department, instructor.

Psychology of Personal Development. Prof. R. C. Givler, Tufts College, instructor.

Modern Cookery. Domestic science graduates of the Edison Home Service Staff, instructors.

Parliamentary Procedure. George Demeter, parliamentarian to the State Senate, director of the Demeter School of Parliamentary Practice and a writer on the staff of "The Parliamentarian," instructor.

Gymnasium Classes at Y. M. C. U. Arrangements have been made for the entry of Boston Elevated men in the gymnasium classes of the Y. M. C. U., 48 Boylston Street, at nominal cost.

Correspondence Courses. Three correspondence courses will be offered this year with H. H. Hile, research engineer, as instructor, as follows: A B C of the Electric Car, A B C of the Motor Bus, and A B C of Electric Railway Power (a new course). Employees may begin these courses at any time, but it is desirable to enroll at the beginning of the winter season so that diplomas may be awarded at the 1931 closing exercises.

The Standard Red Cross First Aid Course. Under the auspices of the Metropolitan Chapter of the American Red Cross. Leader, a Red Cross physician to be appointed. This course is open to all men and women. Members of the previous home nursing course will find this one particularly valuable. This course will lead to a Red Cross certificate.

Home Hygiene and Care of the Sick. Under the auspices of the Metropolitan Chapter of the American Red Cross. Leader, Mrs. Jessie Higgs, R.N., of the Red Cross staff. This course is designed for women employees and in general will be similar to the course given two years ago. It will lead to a Red Cross certificate.

THE COVER PICTURE

One of the favorite points of interest for the American Legion convention next month, as it has been for visitors for nearly two centuries, will be Faneuil Hall, located in Dock Square. Its setting has been greatly improved by the recent enlargement of the Square. The Hall dates back to the offer of a wealthy citizen, Peter Faneuil,* in 1740, to supply a needed market building for Boston. It was completed two years later, and contained, besides the market, a public hall for town meetings and rooms for town officials. Only nineteen years after completion it was destroyed by fire, but it was rebuilt within two years. During the British occupation of Boston it was a theatre. The building gained the name of "the cradle of American liberty" through its use by the patriots during the Revolutionary period. In 1805 the building was doubled in size, and the great hall, accommodating 3,000 people, became famous for the meetings held there. Webster, Choate, Sumner, Wendell Phillips, Everett and other great orators were heard there. The building is, in part, still used as a market, as originally planned, while in the hall are paintings and other souvenirs of historic and artistic value.

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* Faneuil, one of the most prominent merchants of his day, died in 1743, soon after the completion of the Hall, at the early age of 43 years.

CHANGES IN THE RESERVE FUND

Fiscal Year 1929-30
July 1, 1929, $1,000,000

July	$285,903.19*	Jan.	$195,210.33†
Aug.	361,650.56*	Feb.	18,035.80†
Sept.	197,825.11*	Mar.	178,957.43†
Oct.	164,866.77†	Apr.	54,282.43†
Nov.	64,148.53†	May	45,824.02†
Dec.	286,824.84†	June	$113,749.60*

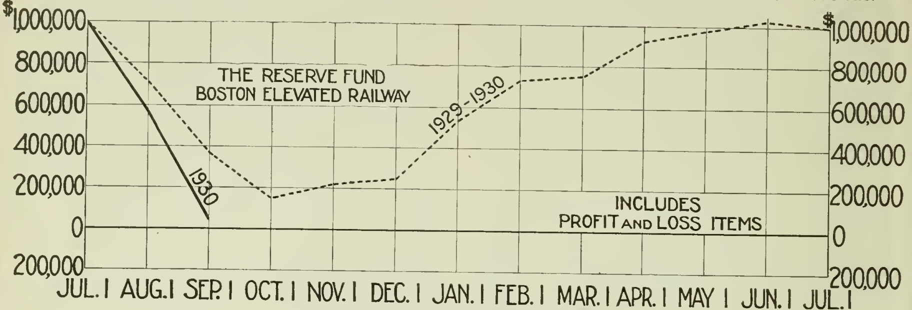
Profit and loss credit..........$50,978.31

†Excess of revenue over cost of service.

Fiscal Year 1930-31
July 1, 1930, $1,000,000

July	$424,295.95*
Aug.	531,494.84*

*Excess of cost of service over revenue.



AUGUST OPERATION

	1930	1929
GENERAL FINANCIAL DATA		
Cost of service exceeded revenue	$531,494.84	$361,650.56
Operating revenue per car-hour (A.E.R.A. std.)	$5.26	$5.57
Operating revenue per car-mile operated	52.29c	56.50c
Average fare per revenue passenger	9.251c	9.239c
Ratio operating expense to operating revenue	86.17%	81.71%
PASSENGERS CARRIED		
Revenue passengers	23,810,114	25,902,358
Per cent 5c and 6¼c passengers	18.71%	19.08%
Revenue passengers per car-mile operated	5.460	5.811
OPERATING FACTS		
Trips operated	591,987	583,797
Car-miles operated:		
Rapid-transit lines	1,260,537	1,301,542
Surface, two-man	785,822	1,076,233
Surface, one-man	1,667,065	1,479,934
Express, newspaper and sprinkler cars	12	955
Motor bus	646,963	598,544
Total miles operated	4,360,399	4,457,208
ACCIDENT DATA		
Accidents per 10,000 car-miles	1.44*	1.51*
Accidents per 10,000 bus-miles	1.67*	1.72*
Revenue passengers carried per accident	19,600	20,850
Average number of witnesses per accident	3.3	3.31
COMPLAINTS AND DEFECTS		
Complaints in regard to car service	7	20
Employees complained of by car riders	50	66
Car defects reported per 10,000 car-miles	2.3	3.4
INFORMATION ABOUT POWER		
D.c. kw.hr. output gross for month	15,616,700	15,891,500
Maximum kw. load	58,100	60,300
Tons of coal consumed for power	12,503	13,517
Lbs. of coal for power per d.c.kw-hr. at cars	1.799	1.910
Operating and maintenance cost of power, including depreciation:		
Per d.c.kw.-hr. for car service	1.22c	1.15c
Per revenue car-mile	4.65c	4.26c
Kw.-hr. per revenue car-mile	3.801	3.716

*Does not include miscellaneous accidents or derailments.

September 22, 1930. 81 EDWARD DANA, *General Manager.*

BOSTON ELEVATED RAILWAY
CO-OPERATION

Volume 9 OCTOBER, 1930 Number 10

Places People Like to Visit

GARDNER MUSEUM ON FENWAY

(See page 175)

To All "El" Employees

MONDAY, Oct. 6, and Tuesday, Oct. 7, were banner days for the Railway, from the standpoint of people transported and transported well. Over 2¾ million revenue passengers were carried on those days.

The Railway's achievement was praised editorially, as in the following excerpt from the Boston Herald of Oct. 8:

"The trustees of the Boston Elevated and Police Commissioner Hultman ought to be pretty well satisfied with what their representatives did yesterday (i. e., Tuesday). The police had the most severe test, everything considered, in the history of the department; and there has been no occasion on which so much was expected of the Elevated. A breakdown of the service would have been excusable in view of the tremendous crowds—greater by hundreds of thousands than any which ever gathered in Boston before. There was considerable crowding, which is inevitable at such times, but on the whole the management seems to have done its biggest job in the very best manner."

This wonderful day's work was possible only because there was teamwork on every hand.

I take this opportunity to congratulate and thank the whole personnel for the co-operation of individuals and the co-ordination of services which made this result possible.

Edward Dana

BOSTON ELEVATED RAILWAY

CO-OPERATION

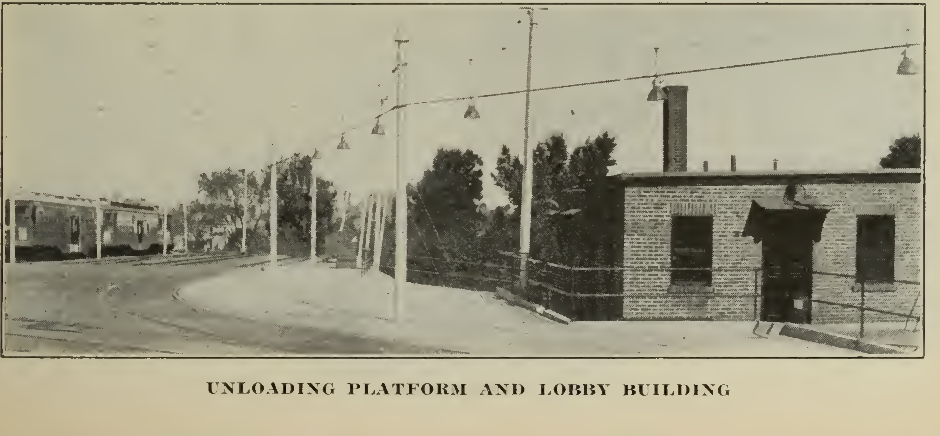
VOL. 9 OCTOBER, 1930 NO. 10

WAITING ROOM AND LOADING PLATFORM AT LAKE STREET

LAKE STREET TERMINAL IMPROVEMENT

Familiar Waiting Room and Shelter Formerly Located on Commonwealth Avenue Near Lake Street Is a Thing of the Past. Railway Has Now an Up-to-Date Terminal Yard at This Point With Excellent Facilities for Passenger Interchange

THROUGH the completion of the improvement at the Lake street terminal of the Lake street line on Commonwealth avenue, Railway patrons in Brighton and Newton are now able to alight from and board cars more conveniently than heretofore and to transfer to and from the Middlesex and Boston buses in greater comfort. For many years, as explained in the issue of "Co-operation" for June, 1930, the interchange of passengers and shifting of cars were done here in the reservation on Commonwealth avenue. At this point stood the familiar waiting room and shelter pictured in the illustration on page 164. This was jointly owned by the Middlesex and Boston and the Boston Elevated. Now all of this operation is off the street in the yard shown diagrammatically on page 164. This drawing differs in a few particulars from the preliminary one shown on page 99 of the June issue.



UNLOADING PLATFORM AND LOBBY BUILDING

From the standpoint of the passengers, the essential features of the improvement are that separate concrete loading and unloading platforms are provided off the street, and that confusion in passenger interchange is thus avoided. Better facilities are also provided for interchange with the M. & B. buses, which load in front of the waiting room on Commonwealth avenue, forming an integral part of the loading platform.

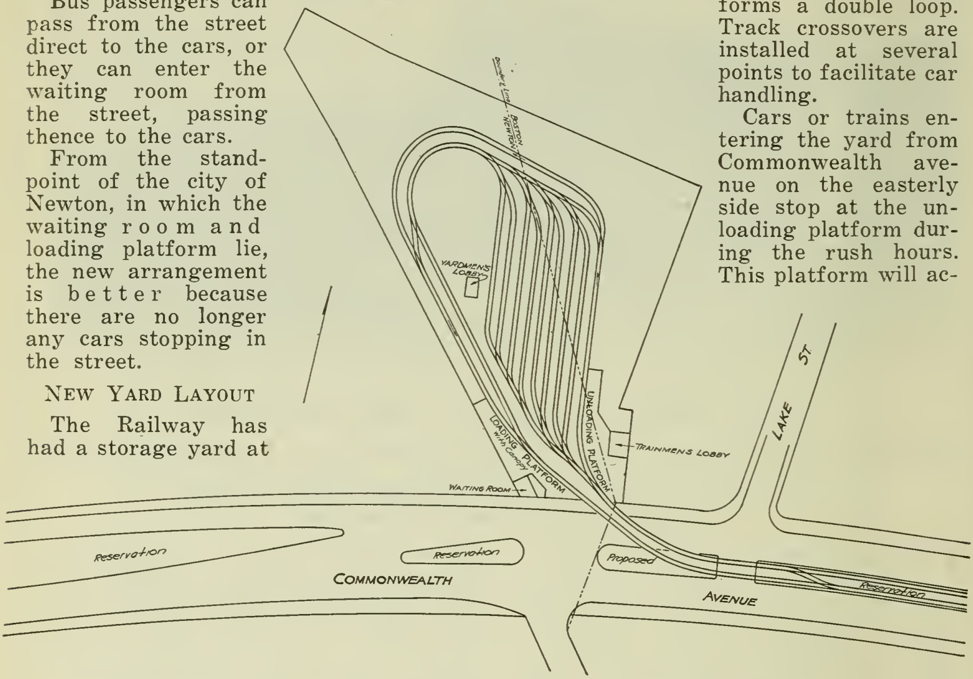
Bus passengers can pass from the street direct to the cars, or they can enter the waiting room from the street, passing thence to the cars.

From the standpoint of the city of Newton, in which the waiting room and loading platform lie, the new arrangement is better because there are no longer any cars stopping in the street.

New Yard Layout

The Railway has had a storage yard at this point for many years. It contained dead-end tracks. In revising the track layout to meet the new operating conditions imposed by the terminal plan, the tracks were connected up as shown in the diagram, two additional tracks being provided to make up for the storage space subtracted to allow for the platforms. The track leading into the terminal now branches into eight other storage tracks and the whole layout forms a double loop. Track crossovers are installed at several points to facilitate car handling.

Cars or trains entering the yard from Commonwealth avenue on the easterly side stop at the unloading platform during the rush hours. This platform will ac-



PLAN OF THE LAKE STREET STATION IMPROVEMENT

BEFORE THE IMPROVEMENT
(See opposite picture)

commodate three cars. When cars are pulling out of service they unload on one of the other tracks, which does not inconvenience passengers because the front part of the yard is surfaced with cinders up to the level of the rails.

PLATFORMS AND WAITING ROOM

The unloading concrete platform is not covered, but over the loading platform, on the westerly side of the yard, is a steel and wood canopy covering the entire area. This platform, like the other, is three cars long.

Opening upon this loading platform as well as upon the street is an attractive waiting room, approximately 12 by 18 feet in size.

OTHER BUILDINGS

Near the unloading platform and the entrance to the yard is a small but complete brick lobby building, with toilet facilities, a starters' office and heating plant. It commands a good view of the yard.

Toward the westerly side of the yard is a wooden yardmen's building, about 12 by 20 feet in dimensions, with lobby and stockroom for the use of car cleaners and shifters. This provides facilities formerly found in less convenient form in the carmen's lobby.

CHANGES IN PENSION LIST

SINCE the last report regarding the Railway pensioners appeared in the issue of "Co-operation" for September, page 152, five pensioners have been added to the list and eleven have been reported as having died. The total on the list at last report was 491. The total is now 485, and the total monthly compensation is just under $22,500. The changes for the past two months were as follows:

Added since last report:

A. W. Flanders, paymaster
Thomas F. Jenkins, foreman R. T. shops
Wm. K. Whiting, carpenter
Patrick O'Brien, inspector, Division 3
James Quann, laborer

Reported since last report as having died:

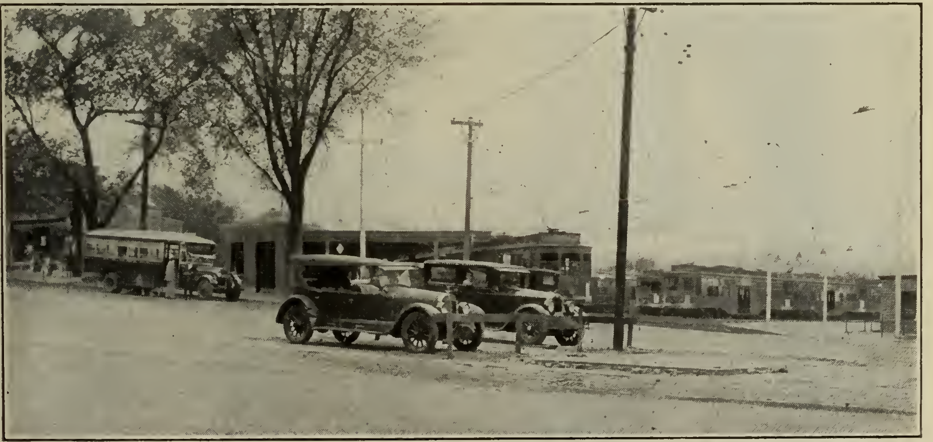
P. T. Laffoly, carpenter
M. Cody, trackman
Patrick Craven, stableman
Mrs. J. Lester, ticket counter
Nat. Jenness, station receiver
Thomas O. Chapman, motorman
James Rafferty, laborer
Frank M. Hill, starter
Patrick Hoar, warder R. T. L.
Charles L. Husk, clerk
T. J. Delaney, operator

Second Annual Ladies' Night

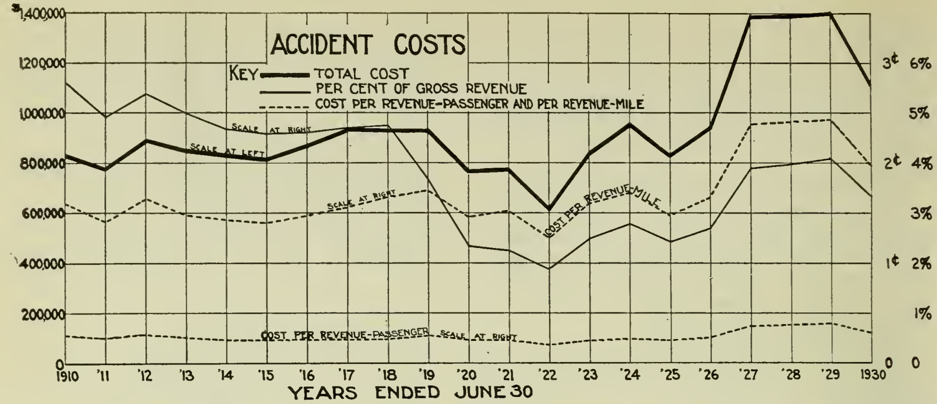
Boston Elevated Railway Supervisors' Association

Wednesday Evening, Nov. 19
In the
ELKS' BALLROOM
Central Square, Cambridge

Tickets, 75c per person
Obtainable from Board of Control
or Any Member of Special
Committee Listed on Page 175
of This Issue



AFTER THE IMPROVEMENT
(See opposite picture)



ACCIDENT COSTS DECREASING

For the first time since 1925 the accident costs last year showed a substantial decrease. This decrease reflected the careful study of accident causes and their removal which has been going on for several years. This work culminated in the receipt by the Railway of the Anthony N. Brady memorial gold medal in 1929 for the record of 1928.

As was shown clearly and effectively in the presentation made to the Brady award committee, a remarkable record for accident reduction was achieved in 1928. But accident costs do not fall immediately with reduction in number of accidents. In some cases several years are required to complete accident settlements. Thus the financial benefit of a reduction is not obtained until later. In this case there was a lag of two years between cause and effect, which is a reasonable lag. It is probable that the financial record for the fiscal year ending June 30, 1931, will be even better, because 1929 showed a marked reduction in number of accidents over 1928.

At this season the department of transportation is calling attention of motormen, operators, inspectors and starters to the dangers of car operation, due to dead grass, leaves and moisture on the track. Similar hazards are present in connection with bus operation, also.

A 21-YEAR RECORD OF ACCIDENT COSTS

Years Ended June 30	Cost of injuries and damages	Per cent of gross revenue	Cost per revenue passenger	Cost per revenue mile
1910	$834,216.14	5.58	0.2856c	1.59c
1911	778,738.27	4.92	0.2552	1.42
1912	891,059.37	5.39	0.2871	1.63
1913	849,625.95	5.00	0.2603	1.48
1914	834,255.38	4.69	0.2431	1.44
1915	817,581.40	4.57	0.2361	1.41
1916	866,505.68	4.61	0.2383	1.48
1917	931,078.80	4.70	0.2452	1.55
1918	927,373.02	4.76	0.2463	1.66
1919	926,515.47	3.67	0.2796	1.73
1920	764,990.89	2.34	0.2360	1.47
1921	776,407.49	2.27	0.2302	1.52
1922	620,207.73	1.89	0.1780	1.25
1923	840,948.88	2.50	0.2250	1.61
1924	957,998.17	2.79	0.2480	1.71
1925	826,277.81	2.41	0.2229	1.48
1926	940,472.85	2.68	0.2549	1.66
1927	1,383,437.41	3.89	0.3719	2.39
1928	1,386,166.29	3.97	0.3812	2.42
1929	1,400,055.56	4.09	0.3927	2.44
1930	1,112,294.15	3.32	0.3183	1.97

CO-OPERATING WITH THE LEGION

For Its Success in Handling the Crowds Incident to the Recent Convention of the American Legion the Railway Received Enthusiastic Praise from Press and Public. Accidents Were Remarkably Few in Number

NOW that the great convention of the American Legion is over it is possible to look at it in perspective and to evaluate the part which the Railway had in making it the success that it was. In the certainty that record crowds would have to be accommodated, the operating details necessary to this end were given minute consideration well in advance. The result was that the service was maintained with a minimum of delays and with only a few minor accidents.

RECORDS BROKEN

On Monday and Tuesday of Convention Week, Oct. 6 and 7, a total of 2,765,727 revenue passengers were carried, establishing a record for any two successive days in the 34 years of Elevated history. Of these passengers only fourteen claimed injury, and their injuries were of a minor nature.

Good Work! :: :: :: **By Sav**

- Boston Traveler - Oct. 9 - 1930

POPULAR CARTOONIST PRAISES ELEVATED EMPLOYEES THUS

“L” SPEEDS SERVICE TO HANDL

TRANSCRIPT
OCT. 8

City and Tempers Well Kept

Looking about town today, the Bostonian found several reasons for pride. Even before 9 A. M. Washington and Tremont streets in the shopping district had been cleared and cleaned, ready for business. Of the heaviest blizzard of paper that ever blew through Boston, this important section showed scarcely a trace. The Public Works Department evidently merits praise for a hard and efficient night's work. Other streets still needed clearing, but the whole parade route could not be covered at once and we have no doubt that a job so well begun will be carried through to a finish.

From the Boston Elevated come preliminary indications that yesterday's traffic may have been the largest in the road's history. The facts are not yet in hand, and nothing final can be said. But the compiled figures for Monday show that even on the day before the parade, there came a large increase. Receipts jumped to $120,000, which is $21,000—more than 210,000 more fares—than on the comparable Monday in October, 1929. Yesterday's traffic was almost certainly larger still, and may have exceeded the record of $130,000 set on a day just before Christmas in 1926.

The capacity to move such a vast crowd, and move it so well as the Elevated did on the Legion's great day, obviously rests on one thing—the rapid transit system. Without the subways and tunnels no man can imagine that anything but hopeless delay and confusion would have resulted. With the whole cen- rade lines cutting off the whole surface- istrict for the whole day, ld have been of no more use han long trains of Eskimo snowless, sandy desert. people who knew nywhere they de- without too much home as well. Thus, better assurance of t under the lines than tant official credentials pass through the lines. It is even reported that rshing used the tunnels from ull Hall arch, toward the end parade, to make sure he would his train from the South Station with certainty for himself and without interrupting the march.

Finally, Commissioner Hultman, Superintendent Crowley and the Boston police deserve exceptional praise for their handling of as large and difficult a task as ever can arise in the course of regular civic police work. As observed at a strategic point—the reviewing stand in front of the State House, where the pressure of the crowd was at its tensest as people constantly worked their way up from the Common to gain some view across the already solid lines of spectators—the tact, patience and steadiness of the police were unbounded. This is the prime proof of good morale on the part of those responsible for safe and efficient handling of large crowds, and we are glad to say that on a memorable day in the Boston this city's populace d that proof in abundance.

MORNING GLOBE
OCT. 9

TOTAL OF 1,479,000 ON ‘L’ PARADE DAY

Figure Exceeded but Once, at Christmas in 1916

Riders on Monday and Tuesday Set Record for Transit Line Here

Figures given out yesterday show that the Boston Elevated Railway transported 1,479,000 passengers on parade day, Tuesday.

The number, according to General Manager Edward Dana, was the greatest ever carried on a holiday or parade day and is the largest transported on any day in the Elevated's history with ne exception, Saturday, Dec 23, 1916, t year the last shopping day before stmas, when 1,514,000 passengers arried.

uesday the number of passengers eded the number carried on d days as Dewey Day, Oct nd Army parade, Aug 16, parade, Oct 16, 1915; rade, May 27, 1916, and Nov 11, 1918. The ers carried on those ey Day, 848,562; e, 1,043,859; suf- 65; preparedness tice Day, 1,120,- y, the days convention rried a to- a record n the 34 y. Of ve re- and ac-

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HERALD
OCT. 8

POLICE AND ELEVATED

The trustees of the Elevated and Police Commissioner Hultman ought to be pretty well satisfied with what their representatives did yesterday. The police had the most severe test, everything considered, in the history of the department, and there has been no occasion on which so much was expected of the Elevated. A break down of the service would have been excusable in view of the tremendous crowds—greater by hundreds of thousands than any which ever gathered in Boston before. There was considerable crowding, which is inevitable at such times, but on the whole the management seems to have done its biggest job in the very best manner.

The police were apparently acting under instructions from Supt. Crowley to have infinite patience, boundless tolerance, endless courtesy—and then some. They managed to hold the crowds and their tempers in check at the same time, and that was something of a feat for men who had been on almost constant duty for many hours. With a tercentenary celebration, a federation of labor gathering, an American Legion convention and the visit of a President to handle, the police had a hundred opportunities to make a mess of things. Instead, they controlled without appearing to exercise any undue force in doing so. The new commissioner and the old superintendent have reason to feel proud of the performance of a force which, only a few months ago, was supposed to have been shot all to pieces by the Garrett scandal.

MORNING GLOBE
OCT. 8

NO RUSH HOUR JAM AS WATCHERS LEAVE

Railroads and “L” Report Handling of Crowd Easy

Many Departed at Noon and Others Came to Take Their Places

teady “rush hour” stream of traffic day long, but no serious jams—the story in a nutshell of how largest crowd in history was d yesterday. s transportation facilities crucial test with flying the possible exception arteries, which just he Boston Elen adequate throng.

TRAINS LENGT TOMO

No Interruptio Transit Lines Will Be

Arrangements largest crowds i morrow have be Boston Elevated

Service on the r will be more fr trains will be leng pected that the c to move about 8 morning and extr entire system will that time on.

There will be of Elevated servi The bus lines ope center of the cit tinued from abou after the streets Stuart st.-Rowes will be operated urs, but the rou operate bet st., Sou Wharf. servi rd B on se ring be c and t usetts av bridge. h the aid of usetts ave. b tts station and be kept open as all times. It is there will be an ence with the ser ley station and tion.

The Huntlines, th sett

POST
OCT. 9

RECORD SET BY ELEV

2,780,000 Pass Transported

Establishing a successive days history of the of 2,780,000 pass on Monday a days on wh vention eve Of these the parad day o

;est Evening Circulation in New England MONDAY, OCTOBER 6, 1930

LARGEST CROWDS IN HISTORY

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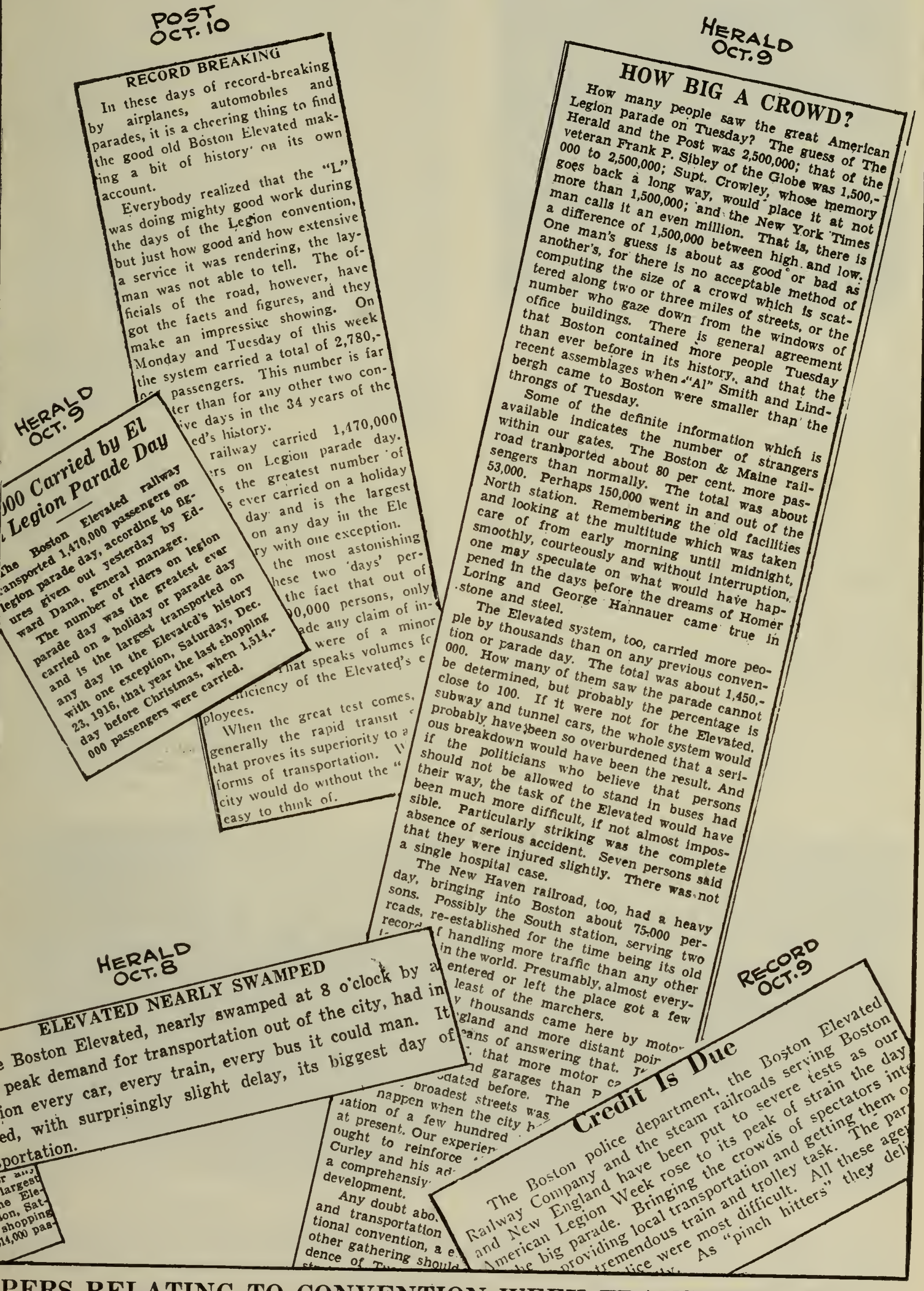


POST OCT. 10

RECORD BREAKING

In these days of record-breaking by airplanes, automobiles and parades, it is a cheering thing to find the good old Boston Elevated making a bit of history on its own account.

Everybody realized that the "L" was doing mighty good work during the days of the Legion convention, but just how good and how extensive a service it was rendering, the layman was not able to tell. The officials of the road, however, have got the facts and figures, and they make an impressive showing. On Monday and Tuesday of this week the system carried a total of 2,780,- passengers. This number is far ter than for any other two con- ive days in the 34 years of the ed's history.

railway carried 1,470,000 ers on Legion parade day. s the greatest number of s ever carried on a holiday day and is the largest on any day in the Ele ry with one exception. the most astonishing hese two 'days' per- the fact that out of 0,000 persons, only ade any claim of in- were of a minor That speaks volumes fc eficiency of the Elevated's e ployees.

When the great test comes, generally the rapid transit that proves its superiority to a forms of transportation. W city would do without the " easy to think of.

HERALD OCT. 9

00 Carried by El Legion Parade Day

The Boston Elevated railway transported 1,470,000 passengers on legion parade day, according to figures given out yesterday by Edward Dana, general manager.

The number of riders on legion parade day was the greatest ever carried on a holiday or parade day and is the largest transported on any day in the Elevated's history with one exception, Saturday, Dec. 23, 1916, that year the last shopping day before Christmas, when 1,514,- 000 passengers were carried.

HERALD OCT. 9

HOW BIG A CROWD?

How many people saw the great American Legion parade on Tuesday? The guess of The Herald and the Post was 2,500,000; that of the veteran Frank P. Sibley of the Globe was 1,500,- 000 to 2,500,000; Supt. Crowley, whose memory goes back a long way, would place it at not more than 1,500,000; and the New York Times man calls it an even million. That is, there is a difference of 1,500,000 between high and low. One man's guess is about as good or bad as another's, for there is no acceptable method of computing the size of a crowd which is scattered along two or three miles of streets, or the number who gaze down from the windows of office buildings. There is general agreement that Boston contained more people Tuesday than ever before in its history, and that the recent assemblages when "Al" Smith and Lindbergh came to Boston were smaller than the throngs of Tuesday.

Some of the definite information which is available indicates the number of strangers within our gates. The Boston & Maine railroad transported about 80 per cent. more passengers than normally. The total was about 53,000. Perhaps 150,000 went in and out of the North station. Remembering the old facilities and looking at the multitude which was taken care of from early morning until midnight, smoothly, courteously and without interruption, one may speculate on what would have happened in the days before the dreams of Homer Loring and George Hannauer came true in stone and steel.

The Elevated system, too, carried more people by thousands than on any previous convention or parade day. The total was about 1,450,- 000. How many of them saw the parade cannot be determined, but probably the percentage is close to 100. If it were not for the Elevated subway and tunnel cars, the whole system would probably have been so overburdened that a serious breakdown would have been the result. And if the politicians who believe that persons should not be allowed to stand in buses had their way, the task of the Elevated would have been much more difficult, if not almost impossible. Particularly striking was the complete absence of serious accident. Seven persons said that they were injured slightly. There was not a single hospital case.

The New Haven railroad, too, had a heavy day, bringing into Boston about 75,000 persons. Possibly the South station, serving two roads, re-established for the time being its old record f handling more traffic than any other in the world. Presumably, almost every- entered or left the place got a few least of the marchers.

y thousands came here by moto gland and more distant poi eans of answering that. J . that more motor ca nd garages than p odated before. The broadest streets was happen when the city h uation of a few hundred at present. Our experien ought to reinforce Curley and his ad a comprehensiv development.

Any doubt abo and transportation tional convention, a e other gathering should dence of T

HERALD OCT. 8

ELEVATED NEARLY SWAMPED

The Boston Elevated, nearly swamped at 8 o'clock by a sudden peak demand for transportation out of the city, had in operation every car, every train, every bus it could man. It handled, with surprisingly slight delay, its biggest day of transportation.

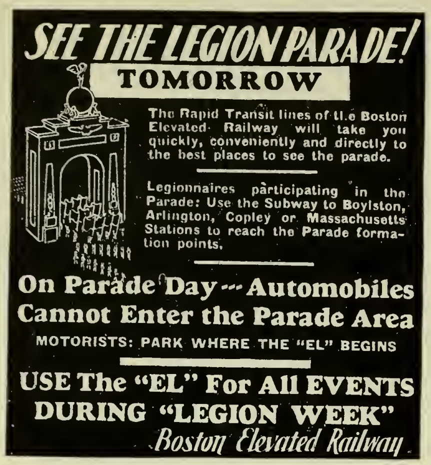
on total for any t and the largest day in the Ele- ne exception, Sat- the last shopping when 1,514,000 pas-

RECORD OCT. 9

Credit Is Due

The Boston police department, the Boston Elevated Railway Company and the steam railroads serving Boston and New England have been put to severe tests as our American Legion Week rose to its peak of strain the day he big parade. Bringing the crowds of spectators int providing local transportation and getting them o tremendous train and trolley task. The par lice were most difficult. All these age As "pinch hitters" they del

SPAPERS RELATING TO CONVENTION WEEK TRANSPORTATION



SEE THE LEGION PARADE!

TOMORROW

The Rapid Transit lines of the Boston Elevated Railway will take you quickly, conveniently and directly to the best places to see the parade.

Legionnaires participating in the Parade: Use the Subway to Boylston, Arlington, Copley or Massachusetts Stations to reach the Parade formation points.

On Parade Day — Automobiles Cannot Enter the Parade Area

MOTORISTS: PARK WHERE THE "EL" BEGINS

USE The "EL" For All EVENTS DURING "LEGION WEEK"

Boston Elevated Railway

Sample 2-Column Newspaper "Ad"

On Legion Parade Day, 1,449,970 revenue passengers were carried, a number exceeded only once, on Dec. 23, 1916, when 1,514,027 passengers were carried. The fare then was five cents. Parade Day broke the record for revenue received in one day. By way of comparison with other record days, the following will be of interest: On Dewey Day, Oct. 14, 1899, 848,562 passengers were carried; on Grand Army Parade Day, Aug. 16, 1904, 1,043,559; on Suffrage Parade Day, Oct. 16, 1915, 1,265,265; on Preparedness Parade Day, May 27, 1916, 1,372,336, and on Armistice Day, Nov. 11, 1918, 1,120,179.

Assisting the Visitors

In co-operation with the Legion the Railway arranged to help man the information booths located at five strategic points, as follows:

Cadet Armory, Columbus avenue and Arlington street.

Copley square, on the Library steps.

Boston Common at the corner of Charles and Boylston streets.

Boston Common at the corner of Park and Tremont streets.

Safety aisle opposite the east end of the Park square building on Arlington street.

These booths were in addition to the one already in operation in Dewey square, facing South Station.

The men on duty at these points, who were specially instructed so that they might be able to give full information to visitors and render all necessary assistance, were those shown in an accompanying illustration.

Another contribution of the Railway was a special issue of "'El' News," distributed on rapid-transit trains, giving full details of the Convention Week program.

Historic Tours

Still another contribution to the entertainment of the visitors was the provision of seven tours to points of historic interest in this district, as arranged by the Historic Tours Committee of the American Legion 1930 National Convention Corporation. More than 2,000 visitors patronized these tours, which were of the "personally conducted" variety. To help the tourists make the most of these trips, the Railway issued a large edition of a 16-page booklet entitled, "Historic Tours in Boston and Vicinity," which described five of the trips in detail. Copies of this booklet will be avail-

SPECIAL INFORMATION DETAIL FOR LEGION CONVENTION

Left to right: Michael Dockray, information clerk; Joseph Curley, information clerk; James E. McNeil, operator; John J. Coyne, operator; Raymond J. Tuffey, operator; Owen F. Moore, operator; Patrick McGinnis, operator; Joseph E. Stead, operator; Daniel J. Curley, starter; Michael F. Curren, operator; Edward J. McGuire, operator.

able to other special bus parties which desire to cover the same ground.

Convention Week Advertising

The advertising program of the week included several special newspaper features. The most conspicuous was a large rotogravure display in the Sunday Herald of Oct. 5, addressed to "Legionnaires and Visitors in Boston." This told of the advantages of using "El" service, referred to the additional service to and from the "Pullman areas," told of the special advertising in the Convention program, advertised the charter bus service, etc. It was illustrated with halftones of a surface car, a rapid-transit train and a metropolitan-type bus.

Special block advertisements calling attention to the Legion parade were run during the week. A sample is reproduced on page 170. In the middle of the week, the Railway capitalized the interest in the record-breaking performance of Monday and Tuesday by running the striking "ad" entitled, "Breaking Records!" which is also reproduced with this article.

Also in the convention program the Railway carried a large map on which were depicted the Railway service and places of Convention gatherings.

Special Decorations

As another contribution to the success of the great parade, the "El" head houses or entrance structures on the Mall and at Adams square were specially decorated. Five of these on the Mall, structures which would be in view of the marchers in the parade, were so decorated, thus adding much to the effectiveness of the general effect.

Reactions to "El" Efforts Were Favorable

The best available gage of the public reaction to the efforts of the "El" to furnish ample service, and otherwise cooperate with the authorities, is found in the editorials and news articles which the newspapers printed. One is mentioned in this month's editorial by the general manager. (See also pages 168 and 169.)

Under the caption, "Record Breaking" the Boston Post of Oct. 10 commented editorially in part as follows:

Breaking Records!

On Monday and Tuesday of this week, the days on which the major events of the American Legion Convention were held, the Boston Elevated Railway established new records.

On these two days a total of 2,780,000 passengers were carried. This number is far greater than for any other two consecutive days in the 34 years of the Elevated's history.

The Railway carried 1,470,000 passengers on Legion Parade Day. This was the greatest number of passengers ever carried on a holiday or parade day and is the largest transported on any day in the Elevated's history with one exception.

Of the 2,780,000 riders carried on Monday and Tuesday only 14 claimed to have received any injury whatsoever and these 14 injuries were of a trivial character.

Service on these two days was maintained with a high degree of regularity.

This record of achievement on the most exacting days in Boston's history speaks for itself.

The Boston Elevated Railway wishes to express its appreciation for the fine spirit of co-operation shown by the Boston Police Department, Legionnaires, the general public and its own employees.

USING THE "EL" IS SAFE, DEPENDABLE AND ECONOMICAL

The Elevated system is worthy of your day-by-day patronage. Motorists should

PARK WHERE THE "EL" BEGINS

Boston Elevated Railway

Capitalizing a Good Record

"In these days of record-breaking by airplanes, automobiles and parades, it is a cheering thing to find the good old Boston Elevated making a bit of history on its own account. . . . We think the most astonishing feature of these two days' performance (i. e. Monday and Tuesday) was the fact that out of the nearly 3,000,000 persons, only 14 passengers made any claim of injuries and these were of a minor character. That speaks volumes for the efficiency of the Elevated employees. When the great test comes, it is generally the rapid transit system that proves its superiority to all other forms of transportation. What the city would do without the 'L' is not easy to think of."

The newspapers found real news in the performance of the Railway during the strenuous days of Convention Week.

SERVICE-AT-COST IN BOSTON

In an article on the effect upon initiative and enterprise of service-at-cost agreements, appearing in the September, 1930, issue of "Public Utilities Fortnightly," Walter Jackson, consultant on fares and motor buses, writes this: "Of all the service-at-cost agreements known to the writer, the only one that really guarantees something is that of the Boston Elevated Railway." Following are some excerpts from Mr. Jackson's article, which the editors of the Fortnightly consider "A shrewd appraisal as well as a clear explanation of this feature of regulation which daily seems to assume more importance."

(Excerpts on next page)

"Under the Boston Elevated service-at-cost act, the trustees not only had the right to charge any fare they saw fit, but the further right to meet deficits through assessments against the communities served. The inaugural effort to operate with 5-cent, 7-cent, and 8-cent fares in the first year led to a deficit of $5,415,500. Of this amount, $3,980,151 was met by assessments.

"This situation compelled the trustees to go to a straight 10-cent fare July 10, 1919. By December, the revenues were sufficient to meet the cost of service.

"Now in this one case where dividends are guaranteed has there been any lack of initiative and enterprise? Let us examine the following evidence before answering:

"Although the management was compelled to charge 10 cents to make both ends meet, it was quick to recognize the fact that short-haul riders at lower rates are more profitable than no such riders at all at 10 cents.

"As early as 1921, it began to establish short-haul fares wherever feasible. These have been added to year after year until 1929 showed 2,612,980 patrons at 5 cents, 56,272,366 at 6 and 6¼ cents, and 6,371,689 on pupils' 5-cent tickets. It is true that the great majority (288,789,514) still paid 10 cents, but it is also true that only a management with initiative and a sense of public service would have taken the trouble to develop these short-haul fares and the diversity of fare collection plans they require.

"Back in 1921, one of the leading car builders was desirous of investigating the motorbus field. The car builder was more than a little dubious about the opinion of most managements on bus applications. Finally, he selected Boston as a proving ground, because there he found a management eager to learn the value of a tool then new and almost wholly unknown in American street railway practice. Boston's first bus line began operation in February, 1922. In 1929, it was running some 319 buses in a great diversity of services, including chartered coaches.

"To one who knows what it meant to sell the 'place of the bus' to electric railway men in 1921, this seems to come under the head of initiative.

"But perhaps the greatest achievement in connection with an ever-extending rapid-transit system was the change from "dinky" single cars to 2 and 3-car train operation. Those not acquainted with "the Hub" may be reminded that the surface cars going downtown usually enter long and costly subways. The rentals of these city-owned subways would have been modest for New York subway train lengths and headways, but they were back-breaking for tramcars run individually.

"In 1929 'Rent of subways, tunnels, and rapid-transit lines' took 0.748 cent of the 9.6-cent average fare. It can, therefore, be appreciated what it has meant to be able to replace 34-seat single units with 48 and 62-seat cars in trains. The average age of the 25-foot cars in 1918 was seventeen and two-tenths years! Under the trustee regime, there has been a complete elimination of the inherited junk. More than 1,300 steel cars have replaced 1,476 smaller vehicles. It would be a mighty fine thing if some cities without an agreement of the Boston type could do likewise.

"The Boston management has not only pioneered in short-haul fares, buses and modern electric cars, but has been equally advanced in the education of personnel. Its schools have been a model for many others. As for efficiency: A smaller number of men are turning out more and better car-miles than in 1917.

"Last and not least—by the end of 1929, the tax assessments had been paid back, except for $1,349,333 out of the original $3,980,151."

DASH POSTERS WHICH CAUGHT THE EYE

How Can We Improve the Service?

Suggestions by employees for improvement of service are always appreciated.

Write the General Manager whenever you have an idea which, after careful thought and consideration from every angle, you believe would be helpful and he will give it his personal consideration.

WHAT HAPPENED IN EARLIER YEARS IN OCTOBER

A Year Ago

Mr. Dana was elected a member of the executive committee of the American Electric Railway Association for a term of three years. (On the 1st.)

The Bartlett street garage was opened. (On the 19th.)

The Harvard automatic power substation was put into commission, with a capacity of 6,000 kilowatts. (On the 28th.)

The Railway furnished an exhibit of its educational activities for the A. E. R. A. Convention at Atlantic City.

Two Years Ago

C. A. Bauch, superintendent of Div. 1, retired after 47 years of service with the Railway. (On the 6th.)

The Railway inaugurated a series of broadcasts, as part of "The Transportation Half Hour," over WEEI. (On the 13th.)

Three Years Ago

Mr. Dana was elected president of the American Electric Railway Transportation and Traffic Association at its Cleveland convention. (On the 3rd.)

The Boston Elevated Railway Supervisors' Association was formed. (On the 19th.)

Four Years Ago

Prepayment of fares was discontinued at the Adams square subway station, fares thereafter being collected on the cars. (On the 8th.)

Fourteen representatives of the transportation department attended the 15th Annual Safety Congress in Detroit, having been selected on the basis of an examination held in June, with due allowance for their accident records. (From the 25th to the 29th.)

Twenty Years Ago

Columbus Day was made a legal holiday.

Cars began to run over the Mystic avenue bridge, on the Middlesex Fells line, enabling the Railway to abandon the Union street tracks and to run cars direct. (On the 27th.)

Twenty-Five Years Ago

John Lindall was appointed superintendent of rolling-stock and shops. (On the 21st.)

Thirty-Five Years Ago

Electric-car operation was started to Union square. (On the 15th.)

Seventy Years Ago

The first car was operated on the Suffolk Railway, which had been chartered on April 30, 1857, to serve East Boston. This railway was purchased by the Metropolitan Railroad on July 27, 1864.

SELLING SERVICE

A few weeks ago a car became disabled on Main street, Medford, near Hancock street, due to the breaking of the wiping spring on the line switch. As the operator was unable to make temporary repairs he was obliged to wait for the following car to shackle on.

About the time this delay occurred a bus operator, pulling out of the Fellsway garage, arrived on the scene. Sensing the situation, he took the car passengers upon his bus and, after covering his own trip, took them all to their destination, Sullivan square. This turned some grumbling on the part of the passengers into expressions of appreciation.

The Chicago Surface Lines will be shortly combined with the Chicago Rapid Transit Company, in accordance with plans approved by the City of Chicago and now awaiting approval by the stockholders. The combined lines will operate more than 5500 cars over a track mileage of 1312, with more than 23,000 employees and carrying over one billion revenue passengers per year. The general manager of the Surface Lines, Guy A. Richardson, began his railway career with the Boston Elevated Railway.

EDUCATIONAL CALENDAR FOR NOVEMBER

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
2	3 3rd-year foreman conferences Public Speaking	4 Transportation Problems	5 FORUM SPEAKER: Capt. A. L. Edson, Supt., Boston Municipal Airport	6 4th-year foreman conferences Debating	7 2nd-year foreman conferences First Aid Postgraduate course for foremen	8
9	10 1st-year foreman conferences Public Speaking	11 ARMISTICE DAY	12	13 Debating	14 Customer Contacts First Aid	15
16	17 3rd-year foreman conferences Public Speaking	18 Traffic Analysis and Equipment	19 Supervisors' Association 2nd Annual Ladies' Night Effective Speech	20 4th-year foreman conferences Debating	21 2nd-year foreman conferences First Aid Postgraduate course for foremen	22
23	24 1st-year foreman conferences Public Speaking	25 Transportation Problems	26	27 THANKSGIVING DAY	28 Customer Contacts First Aid	29
30	*Don't Miss the November 5 Forum* *The topic will be "COMMERCIAL AVIATION"*					

MR. DANA OPENS SUPERVISORS' SEASON

In opening the first meeting of the Boston Elevated Railway Supervisors' Association for the season, President James Donohue called to the platform the former presidents, J. M. Patten, T. F. Kivell, J. P. Banks and P. E. Maw. During a short business session a few revisions in the by-laws were approved and the revised by-laws were voted to be printed. Announcements were made regarding the annual "Ladies' Night" and the appointment of the dance committee, the members of which are listed elsewhere. The meeting was attended by 200 or more members and $179 in dues was collected, making a total of at least $250 to date. Forty or more applications for membership were received.

Mr. Dana gave the members present a delightful account of his recent visit to the Pacific Coast and the Hawaiian Islands. This was illustrated with motion and still pictures, many of which were taken by the speaker. Mr. Dana made this trip in connection with his attendance upon the annual convention of the American Electric Railway Association, of which he is a member of the executive committee.

During the evening music was furnished by "Eddie" Fitzgerald. The closing feature was a short and highly acceptable humorous exhibition of sleight-of-hand by Frank Lane, magician.

Mr. Donohue called attention to the next meeting, "Ladies' Night," Nov. 19 (see separate notice). He also urged all members to support the Forum, which opens on Nov. 5 with an address by Capt. A. L. Edson, superintendent of the Boston Municipal Airport.

THE COVER PICTURE

The Isabella Stewart Gardner Museum, Fenway Court, Boston, is open to the public on Tuesdays, Thursdays and Saturdays, from 10 to 4. Admission fee, 25 cents. On Sundays from 1 to 4 admission is free. The Museum is closed on national holidays and during August. This museum, reputed in Mrs. Gardner's lifetime to be the finest private collection of art in the country, is famous for its masterpieces of Italian painting. It also contains a few examples of Italian sculpture, and unique specimens of the highest quality in other fields, such as tapestry, stained glass and Chinese sculpture. The architecture of the court suggests the palaces along the Grand Canal in Venice, and the flowers with which it is filled during the season are a delight to visitors.

TO ALL MEN INTERESTED IN CORRESPONDENCE COURSES

November marks the beginning of the educational program. There are three good correspondence courses offered this year, namely: "The A B C of the Electric Car," "The A B C of the Motor Bus," and "The A B C of Electric Railway Power."

For those men who have started the first two courses but have not finished them, now is the time to renew your interest.

Sign up for the new course in electric railway power and finish up those lessons in the other courses that you have not completed.

PREPARING FOR LADIES' NIGHT

The Board of Control of the Boston Elevated Railway Supervisors' Association on Oct. 15 added the following men to the special committee for the second annual Ladies' Night scheduled for Wednesday, Nov. 19: F. A. Beaudoin, W. E. Benson, W. J. Carney, John Cashman, Edward Childs, Leo Collins, J. J. Cunningham, Frank J. Cusick, E. L. Doyle, Thomas Fleming, J. A. Griffin, George Kelly, Edward Thomas, F. E. White (special treasurer for Ladies' Night).

The original members of the Ladies' Night committee were W. H. Burrell, chairman, and E. R. Kelly. To these were later added the following members of the Board of Control: P. F. Corliss, M. G. Moore and J. B. Flaherty.

TWO BIG EVENTS IN NOVEMBER

NOVEMBER 5

Boston Elevated Forum

EDWARD DANA, *Chairman*

Speaker, CAPT. ALBERT L. EDSON, *Superintendent Boston Municipal Airport*

NOVEMBER 19

Supervisors' Association

JAMES DONOHUE, *President*

SECOND ANNUAL LADIES' NIGHT

Elks' Ballroom, Central Square, Cambridge

(See special notice elsewhere)

CHANGES IN THE RESERVE FUND

Fiscal Year 1929-30
July 1, 1929, $1,000,000

July	$285,903.19*	Jan.	$195,210.33†
Aug.	361,650.56*	Feb.	18,035.80†
Sept.	197,825.11*	Mar.	178,957.43†
Oct.	64,866.77†	Apr.	54,282.43†
Nov.	64,148.53†	May	45,824.02†
Dec.	286,824.84†	June	$113,749.60*

Profit and loss credit..........$50,978.31

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†Excess of revenue over cost of service.

Fiscal Year 1930-31
July 1, 1930, $1,000,000

July	$424,295.95*
Aug.	531,494.84*
Sept.	316,296.99*

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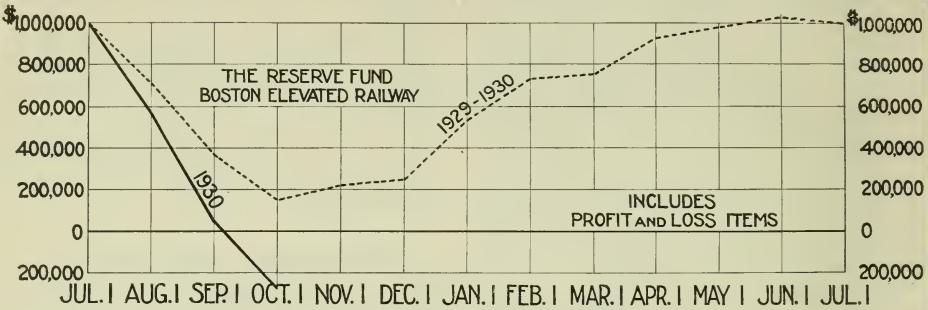
*Excess of cost of service over revenue.



SEPTEMBER OPERATION

GENERAL FINANCIAL DATA	1930	1929
Cost of service exceeded revenue	$316,296.99	$197,825.11
Operating revenue per car-hour (A.E.R.A. std.)	5.68	5.97
Operating revenue per car-mile operated	56.38c	59.27c
Average fare per revenue passenger	8.976c	9.318c
Ratio operating expense to operating revenue	78.85%	75.95%
PASSENGERS CARRIED		
Revenue passengers	26,668,796	26,707,834
Per cent 5c and 6¼c passengers	20.75%	17.58%
Revenue passengers per car-mile operated	6.085	6.165
OPERATING FACTS		
Trips operated	588,864	566,158
Car-miles operated:		
Rapid-transit lines	1,286,487	1,268,214
Surface, two-man	809,984	1,051,706
Surface, one-man	1,656,426	1,434,786
Sprinkler cars		834
Motor bus	629,689	576,652
Total miles operated	4,382,586	4,332,192
ACCIDENT DATA		
Accidents per 10,000 car-miles	1.55*	1.61*
Accidents per 10,000 bus-miles	1.68*	1.89*
Revenue passengers carried per accident	20,680	20,460
Average number of witnesses per accident	3.03	3.72
COMPLAINTS AND DEFECTS		
Complaints in regard to car service	30	19
Employees complained of by car riders	78	73
Car defects reported per 10,000 car-miles	2.2	3.4
INFORMATION ABOUT POWER		
D.c. kw.hr. output gross for month	15,981,100	15,841,200
Maximum kw. load	61,800	63,000
Tons of coal consumed for power	12,569	12,955
Lbs. of coal for power per d.c.kw.-hr. at cars	1.766	1.837
Operating and maintenance cost of power, including depreciation:		
Per d.c.kw.-hr. for car service	1.014c	1.077c
Per revenue car-mile	3.91c	4.09c
Kw.-hr. per revenue car-mile	3.853	3.802

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*Does not include miscellaneous accidents or derailments.

October 22, 1930 81 EDWARD DANA, *General Manager.*

BOSTON ELEVATED RAILWAY CO-OPERATION

Volume 9 NOVEMBER, 1930 Number 11

Places People Like to Visit

Photo by Dadmun

THE BULFINCH STATE HOUSE

(See Page 191)

To all "EL" EMPLOYEES

THE trainmen who have had the opportunity to attend the conferences on "Selling Car Rides" during the past thirteen months have probably noticed that in several of these monthly editorials I have referred to the topics which have been covered in the conferences.

So far the topics touched upon have been: "Information for Patrons" (April); "Courtesy as an Asset" (May); "Effective Use of the Voice" (June); "Competition That We Must Meet" (July); "Value of a Good Memory" (August); "Neatness of Property and Person" (September). These topics all bear directly upon our relations with the public, or as they are sometimes termed, our "customer contacts."

Another essential element in these contacts is "Politeness." By this I do not mean the servility or false humility sometimes assumed by those who wish to curry favor. Rather I refer to the respect which we all owe to each other, and which manifests itself in little acts of courtesy.

Recently the Boston Herald based an editorial on the article on "Neatness," which appeared in the September issue of "Co-operation." The editor particularly commended the reference to the "piano finish" or "piano polish," which neatness gives to service.

Exactly the same idea applies to this element of "Politeness."

> "As in smooth oil the razor best is whet,
> So wit is by politeness keenest set."
> —*Young.*

Edward Dana

BOSTON ELEVATED RAILWAY

CO-OPERATION

VOL. 9 NOVEMBER, 1930 NO. 11

PROGRESS AT GOVERNOR SQUARE

Construction of New Underground Station and Extension of Boylston Street Subway Under Beacon Street and Commonwealth Avenue Is Well Under Way. Necessity for Keeping Traffic Moving Involves Complications

SINCE June 19, 1930, when the department of public utilities approved the plans of the transit commission for the alteration in, and extension to, the Boylston Street subway at and near the present Kenmore Station, steady progress has been made on this improvement. The work is complicated by two conditions, namely,

1. Electric railway and automobile traffic may not be hampered.

2. Numerous underground structures, such as sewers, pipes and conduits, must be moved without impairing the services which they furnish.

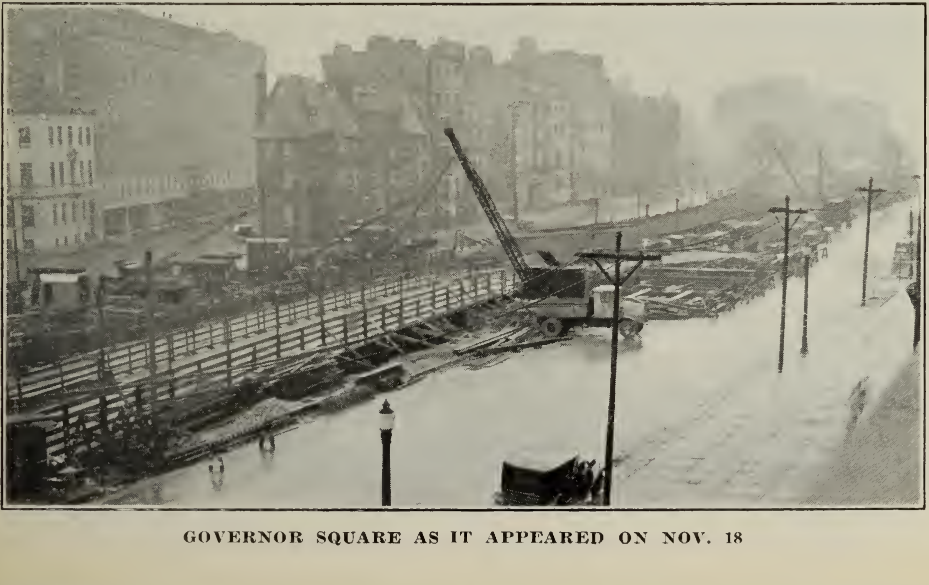
As to the automobile traffic, the intersection of Beacon street and Commonwealth avenue, and their junction with Brookline avenue, Deerfield street and Kenmore street, is one of the busiest squares in the City. The configuration of streets is such that traffic cannot be detoured as is usual in such cases.

Railway service must, of course, be maintained, while the new underground Governor Square station is constructed. The subway is to be extended into Beacon street and Commonwealth avenue, and the end of the present subway is to be lowered to the station level.

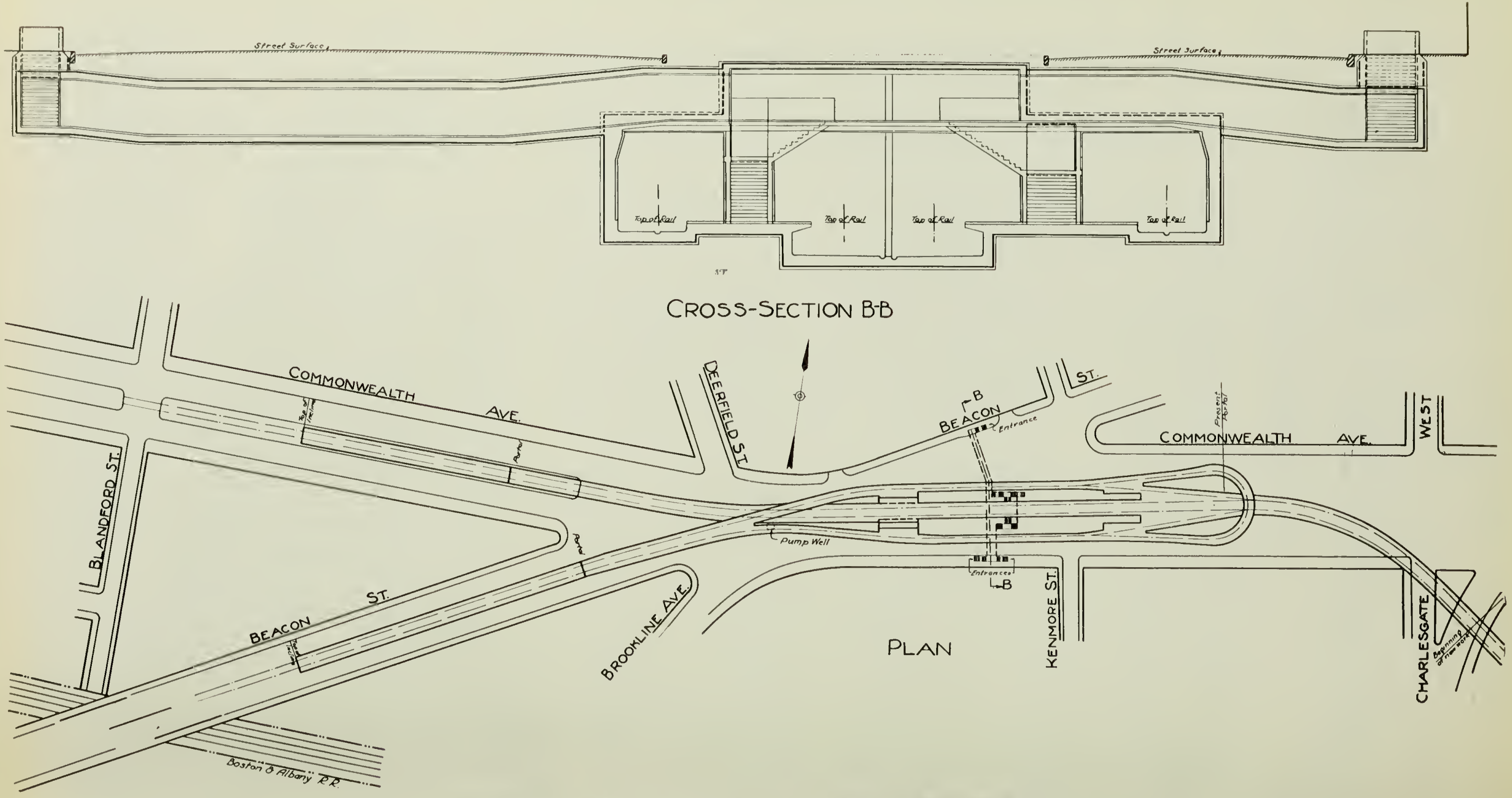
There are at this point, particularly toward the westerly side of the job, several large water pipes and sewers to be moved. Among these are 40-inch and 48-inch water pipes, sewers, and public service conduits and pipes belonging to the telephone, electric light and power, and gas companies.

As this article is written the tracks in Kenmore station have been raised 2½ feet by the Railway to permit the excavation of the site for the new station. The Transit Department has put down several construction shafts, 40 feet deep, from which the cross drifts are being made. These excavations will be gradually extended toward each other until they meet, the traffic above being carried on timbering until the concrete walls are completed.

The construction shafts are heavily braced and lined with 4-inch tongue-and-



GOVERNOR SQUARE AS IT APPEARED ON NOV. 18



GENERAL PLAN OF GOVERNOR SQUARE IMPROVEMENT

Cross-Section B-B is taken through the station and is a longitudinal section of the sub-passageway from curb to curb.

groove wooden sheeting, driven into place with the aid of power hammers and braced with heavy timbers to withstand the heavy earth pressure.

That part of the Boylston street subway near Muddy River is supported on wood piles which support the "invert," or bottom section of the subway. The invert of the subway is to be lowered, which work is being carried out in the following manner:

Steel H-beams have been installed under the ties supporting the track and the ballast has been removed. These beams are so arranged that the invert and the piles supporting it can be removed in sections, which will allow the lowering of the side and center walls of the subway and the installation of steel cross beams. These will support the track structure and allow a new invert to be constructed. The tracks will be carried at the present level until the time comes to drop them quickly to the new grade.

The new station will be much wider than the bore of the subway, as it will have to be constructed to accommodate four tracks, with wide platforms between. Excavation in connection with the building of the station is now being carried on at the sides of the present station at the street level.

As this is written, about 500 men are engaged in this work, day and night, in three shifts. They are drilling out the old concrete, doing new construction work, etc.

More than 150,000 cubic yards of excavated material will be removed, of which 120,000 cubic yards will be in connection with the station.

Fortunately this work can all be done without recourse to air pressure as the inflow of water can be easily handled by pumping.

According to present plans the job will involve 30,000 cubic yards of concrete, which includes the sewer work. There will be required about 2000 tons of steel, of which 1000 tons will be reinforcing rods for the concrete construction. Waterproofing fabric to the extent of 100,000 square yards will be required, and 30,000 linear feet of wood piling.

NEW STATION IS ON SITE OF FORMER BACK BAY

Construction work at Governor Square is further complicated by the fact that the excavation is being made in filled land. This site was formerly well out in the marshy body of water known as "Back Bay." From 1857 to 1894 a total of 570 acres was filled in here, between the Charles River and "Boston Neck" which connected the Boston peninsula with the mainland toward Roxbury. Back Bay, which was well filled only at high tide, was a menace to the health of the nearby residents as much drainage discharged into it.

This historical reference may serve to explain why the Transit Department is finding the local soil to be of varied nature. Some portions of the digging are in wet ground, requiring pumping night and day. At two of the holes foul-smelling marsh gas was encountered. This is being removed by means of electrically driven blowers which discharge through two shafts, one at the Collins Monument, the other in the reservation.

A copper penny of the United States, dated 1816, was found 12 feet below the

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GOVERNOR SQUARE FROM THE AIR BEFORE WORK COMMENCED surface at the junction of Beacon street and Commonwealth avenue, as digging for the northerly wall of the new structure was under way. A live fresh water lobster was found far under the surface on Commonwealth avenue, which probably got there from the Charles River by an underground water course.

Such findings as these are similar to the objects found earlier when the Boylston street subway was excavated. Many examples are preserved by the Bostonian Society, in the Old State House, where such exhibits as the following may be seen:

Section of ancient pump-log water pipe, found near Park Square.

Oyster shells of large size.

Jaw-bone of horse.

Razor clam shells, found 19½ feet down in silt opposite Berkeley street.

Cow's horn, found 40 feet below the surface at Church street.

Parts of prehistoric fish wiers.

Small, solid cannon shot.

THE GENERAL PLAN

Reference to the drawings reproduced on page 180 will indicate the principal features of the Governor Square development as proposed up to the date of printing of this article. In the center of the square will be the underground station with platforms 362 feet long and provision for future extension to 425 feet.

Entrance to the station will be by way of a sub-passageway nearly 225 feet long, leading from curb to curb directly over the station, where it will enlarge into a lobby roughly 50 feet square. From the lobby 10-foot stairways will lead downward toward the station, each branching into two narrower flights opening upon the island platform.

The parkway in the center of Commonwealth avenue will be extended over the station, occupying the area which is now fenced in at Kenmore station.

As an extension of the Beacon street branch of the subway to Audubon Circle is under consideration, there may be some modification in details of the plan before the Governor Square improvement is completed.

DIVISION OF COST

The Act under which this station is being constructed requires the Railway to pay for the equipment and install it in the new station. This comprises track structure, signals, station appliances, lighting, fare-collection apparatus, etc. The balance of the work is to be done by the Transit Department and paid for by the City.

QUESTIONS

By A. E. J.

How do you feel at the end of the day,
As you leave the job, take the homeward way?
Do you note a thrill within your heart
Because you know you have played your part;

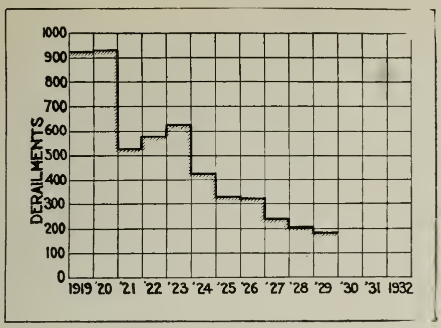
Because you have done your share, and more,
In helping to raise another's score?
And do you thrill to feel that you
Have improved yourself by a point or two?

Was the day's work done with a cheery smile?
Was the routine job made a job worth while?
And is there within you a calm content
Because the day's hours were nobly spent?

As you look back, do you say with pride
That with "boss" away or at your side,
Some definite task was faithfully done?
If so, you're 100 per cent, my son.

Photo by L. A. George

PARK SQUARE BUILDING DECORATED FOR LEGION CONVENTION



Derailments Under 200

CAR DEFECTS FEWER

Although for several years the record of the car defects and motor defects which are corrected by the department of rolling-stock and shops has been excellent, a further improvement is noted for 1929 and 1930. As is disclosed by the chart below, a fairly steady decline has been in progress since the beginning of 1929.

There occurs, of course, a seasonal decline every year, due to the greater ease of maintaining equipment during the summer months. But the improvement noted is independent of this seasonal change. The record for last winter was by far the best for any of the winter seasons recorded on the chart. Similarly the summer record for 1930 was the best recorded. Improved equipment, plus constantly improved maintenance practice, accounts for this remarkable showing.

DERAILMENTS AND SPLIT SWITCHES

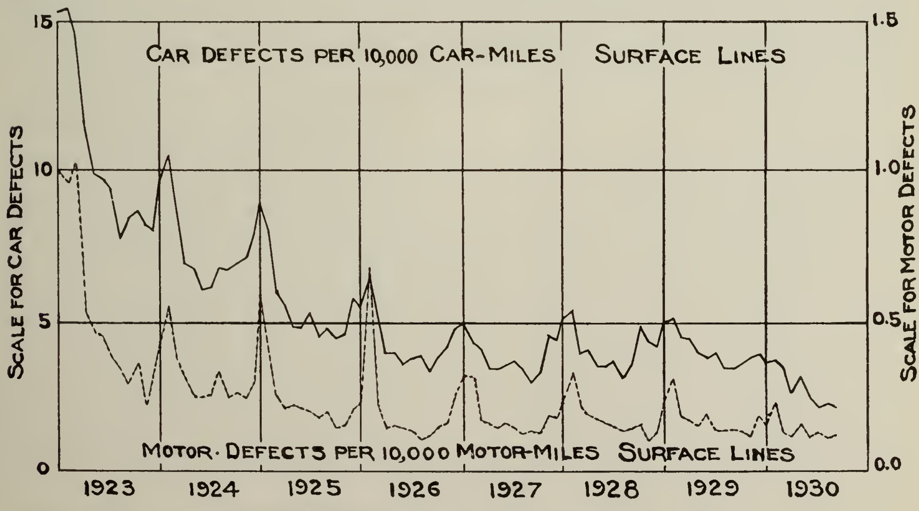
Continued progress was made during 1929 in reducing the number of derailments and split switches which cause so much annoyance and, in some cases, long delays, loss to property and injury to passengers.

The accompanying chart giving this class of accidents is a revision of the one printed in the April, 1929, issue of "Co-operation." It shows that, whereas in 1928 there were 209 derailments and split switches, in 1929 there were only 188, a decrease of 10 per cent. There were 176 surface passenger cars involved in the 1929 record, as well as two rapid-transit trains and ten miscellaneous service cars, snow plows and sand cars.

The mileage made by passenger surface cars during the year was 33,128,533, anaverage of 176,215 miles per derailment or split switch. In the rapid-transit division the mileage operated was 16,924,006, with only two derailments of very minor importance.

Constant attention to everything that might cause a derailment or split switch is given by the several departments concerned. All types of switches are inspected daily by the road department, and all electric switches are constantly under inspection by the wire department.

This steady improvement has continued during the present year. In 1930 there were no derailments or split switches reported anywhere on the system for a period of seventeen days from Sept. 27 to Oct. 14.



CAR AND MOTOR DEFECTS ARE LOWEST IN 1930

"EL" NEWS NOTES

Items of Interest Regarding Recent Incidents With Which All Employees Should Be Familiar

New Subway to Jordan Marsh Basement

ON Nov. 14, Mayor Curley, Miss Mary Curley, Col. Thos. F. Sullivan and officials of the "El" and of the Jordan Marsh Company officially opened the new entrance from the Jordan Marsh basement to the Washington street subway station of the Boston Elevated. Passengers entering the station from the basement subway pay their fares through automatic turnstiles, which admit them freely from the station to the store basement.

This subway not only serves as a connection between the store and the station, but it affords an underground passage under Washington street at the busy intersection with Summer street. It removes much pedestrian traffic from the streets.

The improvement cost Jordan Marsh about $140,000, of which $50,000 was the cost of the station entrance and the remainder that of the subway passage and changes in the store basement. To accommodate the new entrance the Railway had to relocate the toilet rooms and bootblack stands in the station.

Night Service During Governor Square Improvements

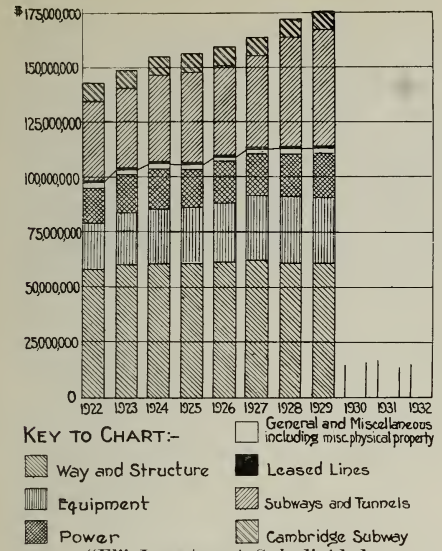
IN connection with the closing of the Boylston street subway between 1:30 and 4:50 a.m. during the construction of the Governor square extension, several changes in night service to the Brighton, Newton, Watertown, Mount Auburn, Commonwealth avenue and Beacon street sections became effective Oct. 27. During early morning hours, a bus line is operated from the corner of Park and Tremont streets, along Tremont and Boylston streets, Massachusetts avenue, Beacon street to Kenmore station. A bus leaves Park and Tremont streets at 1:07 a.m. and every 30 minutes thereafter until 4:37 a.m., when the Boylston street subway opens as usual. The bus leaving at 1:07 a.m. and every hour thereafter until 4:07 a.m. connects at Kenmore with the Beacon street cars. The bus leaving at 1:37 a.m. and every hour thereafter until 4:37 a.m. connects at Kenmore with the Commonwealth avenue and Lake street cars. All the buses connect at Kenmore with the Brighton - Newton - Watertown - Mount Auburn cars which operate from Kenmore on a half-hour schedule from 1:20 a.m. until 4:20 a.m. Persons formerly taking the Brighton-Newton-Watertown-Mount Auburn night cars at Scollay square should take any southbound car for Park street and before leaving the car at Park street obtain a transfer to the bus leaving from the corner of Park and Tremont streets.

On the return trip, the Brighton-Newton - Watertown - Mount Auburn cars leave Harvard square at the same time as formerly, connecting at Kenmore with the bus. The first Beacon street night car leaves Reservoir at 12:38 a.m. and other trips leave Lake street at 1:33 a.m., 2:35 a.m. and 3:35 a.m. These cars connect at Kenmore with the bus. The Lake street-Commonwealth avenue car, connecting with the bus at Kenmore,

(Please turn to page 187)

BOSTON ELEVATED RAILWAY—INV

	Dec. 31, 1929	Dec. 31, 1928	Dec. 31, 1
Road and Equipment			
Way and Structures	$61,283,292.35	$61,675,752.84	$62,548,57
Equipment	30,413,685.77	30,219,791.85	29,537,94
Power	19,183,476.37	18,729,198.48	18,669,59
General and Miscellaneous	1,907,056.04	1,903,192.14	1,901,37
Total	$112,787,510.53	$112,527,935.31	$112,657,49
Miscellaneous Physical Property	735,951.94	745,278.67	58,88
Total B. E. Ry. Investment	$113,523,462.47	$113,273,213.98	$112,716,38
Leased Lines	1,147,842,14	1,146,415.04	1,159,62
Subways and Tunnels	52,588,787.01	50,103,040.02	42,061,37
Cambridge Subway	7,964,000.00	7,964,000.00	7,964,00
Total Investment in Road Owned and Leased	$175,224,091.62	$172,486,669.04	$163,901,38



"El" Investment Sub-divided

COST PASSES $175,000,000

The accompanying table and graph are the first presentation of the data of investment in the "El" in this form. They replace an earlier presentation of the sources of the money invested in the property. The chart will assist in gaining a grasp of the general tendencies of the several items, while the table will be of interest in making a more detailed examination of the data.

Two of the items of the total Boston Elevated Railway investment have been combined in the chart, as they are too small to be shown separately. These are "General and Miscellaneous" and "Miscellaneous Physical Property."

To enable the eye to distinguish at a glance between the Boston Elevated Railway investment and the remainder of the investment, a connecting line has been drawn on the chart to indicate the separation.

"EL" EMPLOYEES ARE COURTEOUS AND ALERT

Radio Talk by Mr. Dana Over Station WNAC During the "Estabrook and Eaton Smoker," Wednesday, Nov. 12, at 8:00 P. M.

MANY people think of the Elevated as a vast system of rails, cars and buses. However, only men and women can give life to such a system. I shall talk briefly tonight of the 4,000 men and women who come in direct contact with the riding public. And, to tell my story, I shall quote from letters recently received.

EXAMPLES OF COMMENDATIONS

A gentleman connected with the editorial department of a Boston evening newspaper praises the courtesy of a conductor in helping a very old woman make a transfer at Northampton station. "She had become completely lost and confused," states the writer. "At the junction of Northampton and Washington streets, the conductor went forward, took the woman out very tenderly, saw that she got off all right, took her across the street and saw, too, that she got up to the elevated to go to Dover street."

Another writer, a woman, tells of the kindness of a conductor on the Cambridge-Dudley surface line. "I am a lame little lady," she writes, "and the conductor not only helped me to the door but off the car in the kindest possible way. On the same trip also, I saw him help a tottering old lady out of the car."

NT IN ROAD OWNED AND LEASED

Dec. 31, 1926	Dec. 31, 1925	Dec. 31, 1924	Dec. 31, 1923	Dec. 31, 1922
$62,135,120.57	$61,591,019.11	$61,477,855.69	$60,895,143.85	$58,335,275.74
26,847,206.19	25,485,197.59	24,966,763.74	23,915,042.10	21,423,224.31
18,227,252.47	17,665.559.02	17,452,644.77	16,545,809.30	15,690,017.53
1,893,866.60	1,902,597.66	1,893,554.61	1,881,601.30	1,788,473.83
$109,103,445.83	$106,644,373.38	$105,790,818.81	$103,237,596.55	$97,236,991.41
58,889.12	58,889.12	58,889.12	112,348.82	556,521.48
$109.162,334.95	$106,703,262.50	$105,849,707.93	$103,349,945.37	$97,793,512.89
1,172,222.40	1,160,239.86	1,155,303.33	1.184,519.66	1,110,959.05
40,726,584.27	40,647,382.05	40,521,841.65	36,598,643.82	36,573,401.74
7,964,000.00	7,964,000.00	7,964,000.00	7,868,000.00	7,868,000.00
$159,025,141.62	$156,474,884.41	$155,490,852.91	$149,001,108.85	$143,345,873.68

A crippled person speaks of the courtesy shown her while she was riding on a Huntington avenue-Chestnut Hill car. Quoting from her letter, "This kind-hearted conductor of whom I write, not only assisted me on and off the car but did it with a cheerful, kindly manner. It left a pleasant impression, and I could not but help feel grateful in my crippled condition for such courteous treatment."

A daughter writes that during the tercentenary exercises at the Boston Garden, a conductor on a Lechmere car rendered unusual service to her mother, a woman of eighty. "We have often received volunteer assistance from your employees since my mother became feeble," states the writer, "but not quite such generous and intuitive aid that this conductor rendered on Sept. 18. A man of his fineness is an asset to any business."

ACCIDENTS PREVENTED

Many letters have been received telling of the alertness of operators in preventing what looked like certain accidents. One writer describes an incident on the Allston-Dudley line where a man dashed in front of an Allston-bound car directly in the path of a Dudley-bound car. Both motormen quickly brought their cars to a standstill. "The act was very impressive," states the writer. "The man could not have been within the field of vision of either operator for more than five or six feet of his travel at a dead run."

How a serious accident was averted at the turn from the Northern Artery into Third street on Tuesday evening, October 28, is told by another writer. "An automobile, recklessly driven, dashed by the front of the trolley car at that turn, and it was only by the prompt action of the motorman in applying his brakes that a smash-up was avoided."

There are an almost countless number of letters from persons who are appreciative of the assistance rendered by the employees either on the cars or at the stations in helping to find and return lost valuables to their owners.

I could multiply many fold these letters praising courteous and intelligent treatment accorded by the employees of the Railway to the traveling public. Of course you realize that Elevated employees, like any other large body of men, have the faults as well as the virtues that we all possess. In my talk tonight I have simply painted the other side of the picture, too often overlooked.

A WORD TO PARENTS

In bringing this little talk to a close, I would ask fathers and mothers who have been "listening in" to warn their boys against stealing car rides. It is needless to tell fathers and mothers how dangerous this is. Children may easily be shaken off or swept from the rear end of the car, or may jump in the path of a car or automobile coming in the opposite direction. The only way to prevent such accidents is to stop boys from stealing rides. I urge parents and school teachers to warn boys against this dangerous practice, to the end that needless suffering may be avoided.

WHAT HAPPENED IN EARLIER YEARS IN NOVEMBER

A YEAR AGO

Colonel Charles R. Gow, postmaster at Boston, addressed first Forum meeting on "The Work of the Postoffice." (On the 6th.)

The Supervisors' Association inaugurated its annual "Ladies Night" and Dance. (On the 21st.)

TWO YEARS AGO

Boston & Maine Railroad formally opened the New North Station to the public. The "El" completed all changes in connection with this development. The Boston Garden was opened. (From the 14th to the 19th.)

THREE YEARS AGO

Extension to Fields Corner of Cambridge-Dorchester tunnel was opened to the public. (On the 5th.)

The first meeting of the newly formed Supervisors' Association was held at Sullivan Square. J. M. Patten was elected president. (On the 16th.)

FIVE YEARS AGO

The new surface loop around the tunnel entrance at Maverick Square was completed. (On the 30th.)

TEN YEARS AGO

Through service from Fields Corner to Massachusetts Station was inaugurated. (On the 16th.)

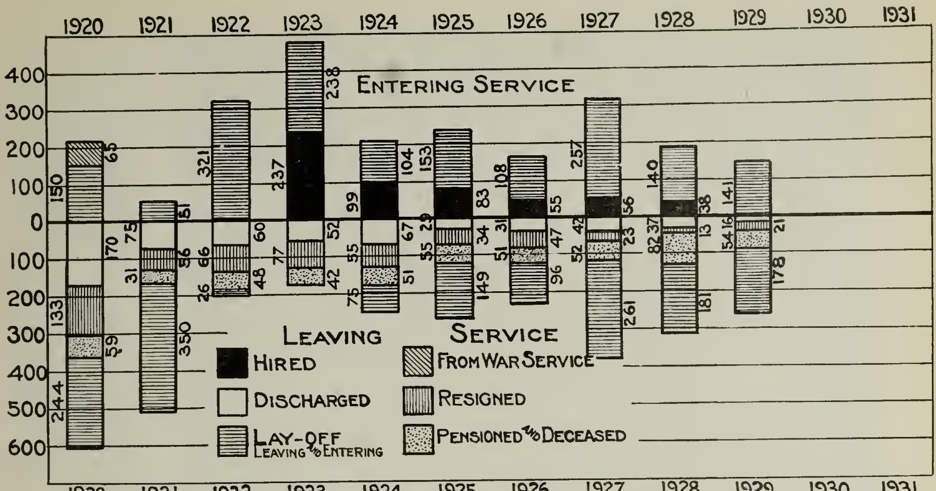
The garage at Sullivan Square was opened. (On the 30th.)

ELEVEN YEARS AGO

James Smith was appointed superintendent of transportation. ·(On the 1st.)

E. A. Kelley was appointend superintendent of Div. 2. (On the 1st.)

A five-cent line from Sullivan Square to Hanover street loop was established. (On the 29th.)



DETAILS OF EMPLOYMENT CHANGES AMONG BLUE-UNIFORM MEN

EMPLOYEES STAY WITH "EL"

The charts above and below give a picture of the situation regarding the employment of blue-uniform men during the past twenty-six years. The lower diagram, which cannot be read accurately by scale, is reproduced to show the general tendency in recent years for men to remain in the "El" service. For ten years, now, there have been few leaving and entering, not more in fact than would be expected due to seasonal changes in the business and to deaths and retirements.

The upper diagram gives more detail for the past ten years. Last year, the only employees entering this branch of the service were those returning from the seasonal lay-off, a total of 141. Of those leaving the service, 178 were accounted for by the seasonal lay-off, fifty-four died or were pensioned, twenty-one resigned, and only sixteen were discharged. This was by far the smallest number of discharges in the period shown.

NEWS NOTES

(Concluded from page 184)

leaves Lake street at 2:05 a.m. and every hour thereafter up to and including 4:05 a.m. Passengers who formerly boarded these night cars in the Park, Boylston, Arlington, Copley or Massachusetts stations now board the bus at the stop on the street surface at the station entrance.

IMPROVED BUS SERVICE

SINCE Nov. 15, the bus line previously operated between Union square, Somerville, and Central square, Cambridge, has been operating to Parker

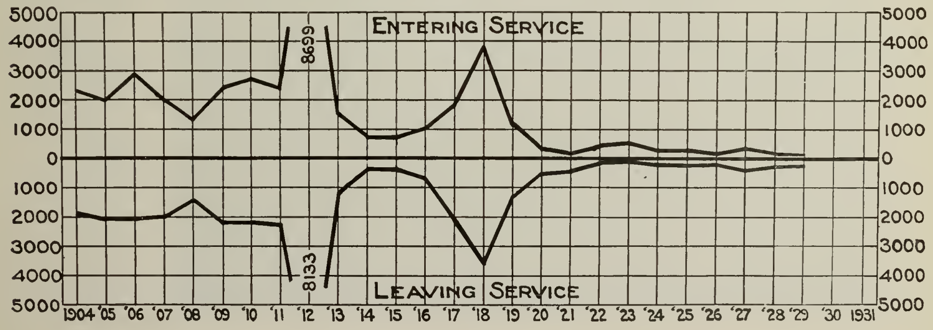


CHART SHOWING THAT BLUE-UNIFORM MEN LIKE "EL" SERVICE

1930-31 COMMITTEE ON EDUCATION

Seated, left to right: A. A. Ordway, rolling-stock and shops; J. J. Reynolds, claims attorney; Edward Dana, general manager; H. H. Hile, research engineer; T. A. Dunbar, bureau of audit. Standing, left to right: J. B. Flaherty, maintenance; E. L. Doyle, power; J. A. Howard, power; J. A. Griffin, transportation; R. B. Smyth, rolling-stock and shops; E. R. Kelly, transportation; E. L. Lockman, maintenance; E. A. Kelley, transportation; H. H. Norris, educational advisor.

street, Somerville. This extension gives persons in that part of Somerville direct bus service to Central square and also permits them to go as far as Central square on the local 5-cent ride.

Since the same date, the car line heretofore operating between Sullivan square, Charlestown, and Union square, Somerville, has been replaced by a bus line covering substantially the same route.

All buses operating to Sullivan square now enter the lower level at Sullivan square station and fares are collected within the station instead of on the buses.

On Nov. 22 a bus route was established between the Savin Hill station of the Dorchester Rapid Transit and the intersection of Northampton and Washington streets via Edward Everett square and Massachusetts avenue. This is operated on weekdays only, between 6:30 and 11.30 a.m.

During the rush hours, from about 6 to 9:30 a.m., a frequency of service from two to five minutes is given from Edward Everett square and Northampton street. For school and business riding, buses are operated betweeen Edward Everett square and Northampton street from 2:30 p.m. to 7:50 p.m. on a frequency of from two to five minutes.

For the convenience of persons using the Bay View bus line operating between the corner of O and Eighth streets and the corner of Kneeland and Washington streets, buses on this route are now operated through the Broadway surface station. This enables riders to make a direct connection with the Dorchester rapid transit without crossing street traffic.

"BOUQUET"

IN a letter to Mr. Dana, regarding the American Legion Convention, Carroll J. Swan, president 1930 National Convention Corporation, The American Legion, wrote in part as follows:

"I wish to thank you for the fine service rendered during the period of the Convention, and want to say that it could not have been improved upon."

CHANGES IN PENSION LIST

Supplementing the report appearing in the October issue of "Co-operation," page 165, the following information is given regarding the pension list. Since the last report the following have been added to the group of pensioners:

John Dent, switch repairman.
John F. Doyle, motorman.
Richard D. Long, yard foreman.
James Marr, motorman.
Angus McCallum, motorman.
Arthur E. Root, starter.

Reported dead since last report:

John A. Mullaney, car cleaner.

There is thus an increase of five in the total on the pension roll, bringing the number from 485 to 490.

BUY CHRISTMAS SEALS

For the 24th season the National Tuberculosis Association is conducting a pre-Christmas campaign to raise funds for its beneficent work in subduing the "white plague." These funds for the year-round fight against the disease are all raised in the few weeks preceding Christmas by the sale of seals at one cent each. A line drawing of this year's seal is reproduced herewith.

HOW CAN WE IMPROVE THE SERVICE?

Suggestions by employees for improvement of service are always appreciated.

Write the general manager whenever you have an idea which, after careful thought and consideration from every angle, you believe would be helpful and he will give it his personal consideration.

EDUCATIONAL CALENDAR FOR DECEMBER

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
	1 3rd-year foreman conferences	2	3 Forum Speaker: H. A. Russell, Int. Union of Operating Engineers	4 4th-year foreman conferences Debating	5 2nd-year foreman conferences Postgraduate course for foremen Effective Speech	6
7	8	9 Transportation Problems	10	11 Debating	12 Customer Contacts	13
14	15 3rd-year foreman conferences	16 Traffic Analysis and Equipment	17 Supervisors' Assn. Speaker: Edw. G. Morris	18 4th-year foreman conferences Debating	19 2nd-year foreman conferences Postgraduate course for foremen	20
21	22 *Meetings Friday,*	23 *Begin Jan. 2,*	24 *Again 1931*	25 CHRISTMAS DAY	26	27

TWO BIG EVENTS IN DECEMBER

Dec. 3, Boston Elevated Forum, Edward Dana, Chairman. Speaker, H. A. Russell, International supervisor International Union of Operating Engineers. Topic: "Organized Labor and Education."

Dec. 17, Supervisors' Association, James Donohue, President. Speaker, Edward G. Morris. Topic: "Sports."

THE COVER PICTURE

This month's example of "Places People Like to Visit" is the central section of the front building of the State House, or that part frequently referred to as the "Bulfinch State House," in honor of its famous architect, Charles Bulfinch.* The cornerstone of this building was laid with great ceremony on July 4, 1795, by Governor Samuel Adams. Paul Revere, William Scollay and other prominent citizens assisted. On Jan. 11, 1798, the General Court marched from the old State House on Washington street to the new one.

The cost of the building was $135,000. Nearly three times that sum was spent by the Commonwealth a century later in reconditioning the original building. Additions to the Bulfinch State House have cost nearly $10,000,000.

The exterior of the Bulfinch State House was painted from time to time, white or yellow as the taste of the time dictated, but recently it was restored to its original finish, as shown in the illustration.

The dominating architectural feature of the building has always been the dome, which at first was entirely of wood and for many years painted lead color or gray. Later a steel framework was installed. In 1802 Paul Revere and Son furnished copper for sheathing it, and it was resheathed in 1831. It was first covered with gold leaf in 1874, and was regilded in 1888, 1898, 1906, 1911 and 1924. Gold leaf of 23-carat fineness is used. Since 1924 the dome has been floodlighted from the wings.

The State House contains a vast collection of paintings, flags and other objects of great historic interest, as well as providing meeting rooms and offices for the transaction of the business of the Commonwealth. The buildings making up the present State House, and their history, are interestingly described in a book written by Ellen Mudge Burrill, printed under the direction of the Sergeant-at-Arms, by order of the General Court.

FORUM DISCUSSES AVIATION

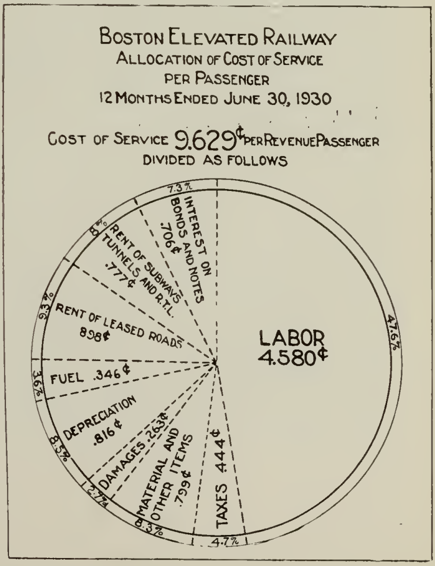
The second season of the Boston Elevated Forum was opened with an address on "Commercial Aviation" by Capt. Albert L. Edson, superintendent of the Boston Municipal Airport. His address was followed by numerous questions which indicated a keen interest in the subject.

The captain traced the history of his own interest in aviation from the time of the World War, which gave the impetus to the development of this great industry. He also outlined the steps in the progress of airplane design, illustrating this feature by means of motion pictures. In fact, in his address Captain Edson treated of all important phases of his subject, closing with interesting information regarding the local airport. One of the outstanding points in the talk was the account of trips made by the speaker, which proved the effectiveness of air travel in saving time for business purposes, and the pleasure and profit which come from flying over historic ground, over scenic attractions and over the territory made famous by great writers.

The second Forum meeting, to be held on Wednesday, Dec. 3, will be addressed by H. A. Russell, international supervisor International Union of Operating Engineers, who will speak on "Organized Labor and Education." Mr. Russell is identified with the educational work of the American Federation of Labor.

SUPERVISORS' DANCE PLEASES

The second annual Ladies' Night and dance of the Boston Elevated Railway Supervisors' Association was held in the Elks' Ballroom, Central square, Cambridge, with an attendance of 500 or more. Every detail was carried out successfully. A complete account of the party will be given in a later issue.



BOSTON ELEVATED RAILWAY
ALLOCATION OF COST OF SERVICE
PER PASSENGER
12 MONTHS ENDED JUNE 30, 1930

COST OF SERVICE 9.629¢ PER REVENUE PASSENGER
DIVIDED AS FOLLOWS

---

*From 1817 until its completion in 1830. Bulfinch was the architect of the national capitol in Washington, D. C.

CHANGES IN THE RESERVE FUND

Fiscal Year 1929-30
July 1, 1929, $1,000,000

July	$285,903.19*	Jan.	$195,210.33†
Aug.	361,650.56*	Feb.	18,035.80†
Sept.	197,825.11*	Mar.	178,957.43†
Oct.	64,866.77†	Apr.	54,282.43†
Nov.	64,148.53†	May	45,824.02†
Dec.	286,824.84†	June	$113,749.60*

Profit and loss credit..........$50,978.31

---

†Excess of revenue over cost of service.

Fiscal Year 1930-31
July 1, 1930, $1,000,000

July	$424,295.95*
Aug.	531,494.84*
Sept.	316,296.99*
Oct.	35,278.21*

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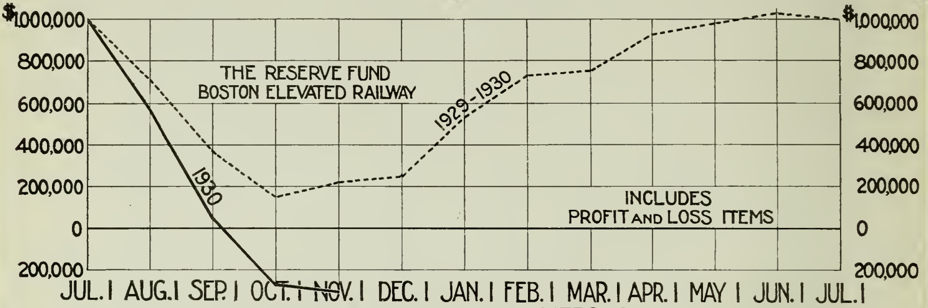
*Excess of cost of service over revenue.



OCTOBER OPERATION

	1930	1929
GENERAL FINANCIAL DATA		
Cost of service exceeded revenue	$35,278.21	
Revenue exceeded cost of service		$64,866.77
Operating revenue per car-hour (A.E.R.A. std.)	$5.93	$6.22
Operating revenue per car-mile operated	58.37c	61.12c
Average fare per revenue passenger	8.951c	9.274c
Ratio operating expense to operating revenue	71.69%	69.92%
PASSENGERS CARRIED		
Revenue passengers	30,446,977	30,566,071
Per cent 5c and 6¼c passengers	20.98%	18.40%
Revenue passengers per car-mile operated	6.322	6.378
OPERATING FACTS		
Trips operated	639,634	621,363
Car-miles operated:		
Rapid-transit lines	1,456,384	1,485,829
Surface, two-man	883,156	1,141,477
Surface, one-man	1,792,314	1,542,011
Advertising and sprinkler cars	39	1,313
Motor bus	684,458	621,630
Total miles operated	4,816,351	4,792,260
ACCIDENT DATA		
Accidents per 10,000 car-miles	1.56*	1.69*
Accidents per 10,000 bus-miles	1.75*	1.93*
Revenue passengers carried per accident	2-,320	19,080
Average number of witnesses per accident	3.33	2.86
COMPLAINTS AND DEFECTS		
Complaints in regard to car service	28	30
Employees complained of by car riders	79	104
Car defects reported per 10,000 car-miles	2.5	3.6
INFORMATION ABOUT POWER		
D.c. kw.hr. output gross for month	18,883,800	18,508,000
Maximum kw. load	75,100	73,100
Tons of coal consumed for power	14,572	14,604
Lbs. of coal for power per d.c.kw.-hr. at cars	1.733	1.788
Operating and maintenance cost of power, including depreciation:		
Per d.c.kw.-hr. for car service	0.913c	0.974c
Per revenue car-mile	3.81c	3.92c
Kw.-hr. per revenue car-mile	4.177	4.025

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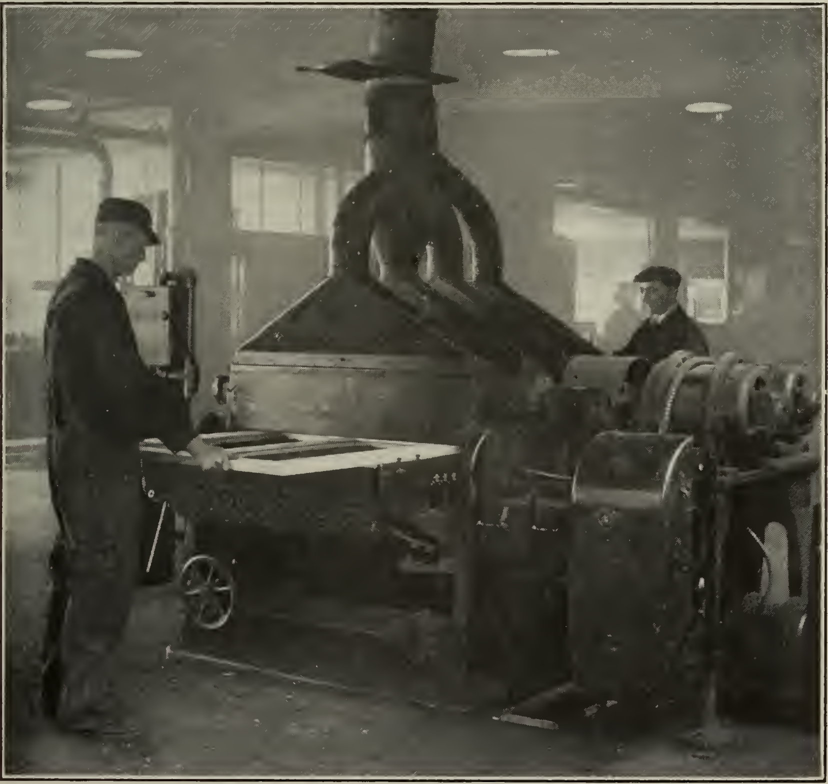
*Does not include miscellaneous accidents or derailments.

November 20, 1930 81 Edward Dana, *General Manager.*

BOSTON ELEVATED RAILWAY CO-OPERATION

Volume 9 DECEMBER, 1930 Number 12

"El" Machines Behind the Scenes



SANDPAPERING MADE EASY

(See Page 206)

To All "El" Employees

HAVE you ever thought of the real value which a customer of the Railway gets in purchasing a 5-cent ride or a 10-cent ride from us? For the 10-cent fare a plant costing over $175,000,000 is at his disposal. As time goes on the investment is constantly increasing.

The car ride is the finished product which the "El" has for sale, and the employees who come into contact with the public, our customers, are salesmen of this product. The more the salesmen know about the product the better they can sell it.

The car and bus men, who have been meeting in occasional customer-contact conferences during the past fourteen months, have compiled certain "selling points" regarding our car rides, as below:

1. A ride on the "El" is a safe ride.
2. It is a comfortable ride.
3. It provides an opportunity for reading the newspaper or a favorite book.
4. It is a quick ride, especially if rapid transit can be used for all or part of the journey.
5. It is a care-free ride, because the Railway is a responsible, substantial common carrier, and its operation is effectively supervised.
6. It is a pleasant ride, because under the supervision of courteous operators.
7. It is an economical ride as compared with other means of transportation.
8. It is a ride in connection with which the man or men in charge of the vehicle are qualified and anxious to give helpful information.
9. And, finally, the "El" ride does not, like an automobile ride, involve a loss of time and risk in finding a parking space. This to many people is now the greatest of all advantages of the "El" car or bus ride.

These are excellent arguments for the use of "El" service. I commend them to all of our "salesmen."

Edward Dana

BOSTON ELEVATED RAILWAY
CO-OPERATION

VOL. 9 DECEMBER, 1930 NO. 12

NEW BUS LOOP IN BELMONT

This New Construction in a High-Class Residence Section Permits the Turning of Buses on Private Property. It Was Carefully Landscaped and After the Trees and Shrubbery Develop It Will Be Even More Attractive

IN order to provide for proper handling of the motor buses operating between Belmont Center and Harvard Square, a plot of land containing 27,150 square feet, at the corner of Leonard street and Alexander avenue in Belmont, was recently purchased. Its size was sufficient to permit the building of a turning loop, with provision for a telephone and toilet facilities in a small building.

This plot of land is in a high-class residential district. Hence in preparing the plot for the Railway's purpose it was necessary to consider the character of the neighborhood and the possible objections which might be raised by the adjacent property owners.

Before any construction work was done, a meeting of the immediate neighbors was arranged, and the matter was thoroughly discussed. The nearby residents employed a landscape architect to make suggestions as to the planting of trees, shrubs and hedges, grading, etc. His suggestions were carefully carried out and, in addition, other trees and shrubs were planted at the request of the property owner directly north, to hide the buses from view from that direction more effectively.

A fence was erected between the Railway property and the lot to the north to prevent persons entering the latter from the Railway property. This was desirable because there are a number of fruit trees on the Railway's property which tempt boys and other irresponsible persons. After entering the lot they are apt to extend their depredations to neighboring property. As soon as the new trees have grown to suitable size, it is proposed to remove these fruit trees and with them the temptation to trespass on the Railway property.

The Town of Belmont has co-operated with the Railway whole-heartedly in this project, as it is beneficial to the town to have the buses turn on private land rather than on public streets. In co-operation with the Railway, Alexander

ATTRACTIVE BUS LOOP PLEASES PATRONS

avenue, which is not an accepted street, has been resurfaced alongside the Railway lot.

That the residents in the immediate vicinity of the lot are pleased with the new arrangement is evidenced by a letter from Robert E. Buffum to Charles B. Gleason, attorney of the Railway, reading as follows:

> "I want to express to you my appreciation, which I am sure is shared by all of my neighbors, for the way you have handled the matter of the busway at the corner of Leonard street and Alexander avenue in Belmont. The scheme which has been carried out is very satisfactory indeed and really adds to the appearance of the lot on which the busway is located and makes a very attractive corner.
>
> "I think you might well give some publicity to the appearance of this land as showing the ideal way in which such a problem can be worked out to the benefit rather than the harm of the community."

As illustrated, the lot presents already a creditable appearance. It will be much more attractive in a few years after the trees, shrubs and hedges have fully developed.

WHAT HAPPENED IN EARLIER YEARS IN DECEMBER

Last Year

The Supervisors' Association was addressed by Daniel Bloomfield, Boston Retail Trade Board (on the 4th), and by Rev. Jones I. J. Corrigan (on the 18th).

"El Service Hour," a series of twelve weekly radio broadcasts over WEEI, was inaugurated. (On the 10th.)

The extension of the Dorchester Rapid Transit to Mattapan was opened. (On the 21st.)

The de luxe bus line, with 25c fare, was discontinued. (On the 31st.)

Two Years Ago

A new highway was completed, passing under East Cambridge viaduct where it joins the Charles River Dam highway at a point opposite Charles street. (On the 1st.)

The Dudley automatic substation of 6,000 kilowatts capacity was put into commission. (On the 18th.)

A demonstration of "Televox," or voice control of electrical equipment, was given before a large gathering of "El" employees. (On the 19th.)

Five Years Ago

The bus line between South and North Stations was established. (On the 7th.)

Passenger earnings for a single day reached the maximum to date, $127,264.45. (On the 24th.)

Six Years Ago

Work was begun on the extension of the Boston street bridge. (On the 3rd.)

Work was begun on the Dorchester Rapid Transit Extension. (On the 3rd.)

Seven Years Ago

The information booth at Park street station was opened. (On the 15th.)

Eight Years Ago

The old wooden storehouse at George street was burned. (On the 10th.)

Ten Years Ago

Div. 1 headquarters and lobby were moved into new building at Fields Corner, the old building being closed. (On the 5th.)

Twelve Years Ago

An eight-cent fare was inaugurated. (On the 1st.)

Wm. M. Butler, chairman of the board of trustees, resigned. (On the 16th.)

Thirteen Years Ago

The Dorchester Rapid Transit was extended to Broadway Station, which was formally opened on this date. (On the 15th.)

Div. 5 was incorporated with Div. 1. (On the 15th.)

Fourteen Years Ago

South Station Under was opened for traffic, with rapid transit extended from Washington street. (On the 5th.)

Eighteen Years Ago

Geo. A. Kimball, under whose direction as chief engineer of elevated and subway construction a large part of the "El" rapid-transit construction was done, died at the age of 62 years. (On the 3rd.)

The new Dover street station with double platform was opened to the public. (On the 9th.)

Nineteen Years Ago

Contracts were signed for the use of the Boylston street subway, the Dorchester tunnel and Cambridge connection (on the 7th), and extensions of leases of the Tremont street subway, the East Boston tunnel, and the Washington street tunnel were executed. (On the 11th.)

Twenty-One Years Ago

The Egleston street substation was put into commission. (On the 30th.)

(Continued on Page 206)

SEVENTY-FIVE YEARS OF LOCAL TRANSPORTATION—I

Boston Was a Pioneer in Transportation on Rails and in the Electrification of Its Horse Railways, March 25, 1856, Marked the Beginning of What Later Became the Boston Elevated Railway

By JOHN N. MACPHERSON

THE first horse-car in this vicinity ran from Cambridge Port to the toll house on the Boston side of the Charles River, across the old wooden West Boston Bridge. This was seventy-five years ago, the exact date being March 26, 1856. It was operated by the Union Street Railway of Cambridge, which later became the Cambridge Street Railway. Its operating force comprised a superintendent and nine men. The route was through Main street from Massachusetts avenue to the bridge, a toll bridge owned by the Hancock Free Bridge Corporation. The trip took eleven minutes and at first all passengers were carried free to popularize the road.

Within a week the line was carrying 2,000 people per day, all free. About a month later the line was extended through Cambridge street to the Revere House at Bowdoin Square, and to Harvard Square on the other end, through Massachusetts avenue. At Bowdoin Square the cars looped through Chambers and Green streets and back again on to Cambridge street for the return trip. The running time for this trip was thirty minutes.

PATRONS PREFERRED FREE RIDES

After two months of free rides the company decided to charge for rides. The railway was making up to six trips a day, with no lack of passengers, particularly students, who appreciated the free ride to Boston. So on June 1, 1856, the fare was set at ten cents. Some of the former patrons denounced the charge as an outrage and threatened to go to the Legislature and have the company's charter revoked. Nothing, however, came of this, and the road progressed rapidly. By November, 1856, it was operating twenty-four cars and employing ninety-seven men.

After this modest beginning railway progress was rapid. Thus, the Metropolitan Street Railway, which started within a year after the Cambridge road, speedily built itself up into a powerful concern, serving downtown Boston and spreading out to Dorchester, Roxbury, Brighton and other suburbs. South Boston was soon served by a company oper-

(From the collection of Edwin S. Webster, Esq.)

CHURCH GREEN, ABOUT CIVIL WAR TIME

ating as the South Boston Railway, which had been organized in 1854 as the Broadway Railway Company. It ran cars from Park Square to City Point via Columbus avenue, Berkeley and Dover streets, across the bridge and over Broadway to City Point.

Another pioneer was the Middlesex Railway, organized to furnish service to the people of Charlestown. It had to overcome bitter opposition, but was finally granted a permit in 1857. Its first car ran from Charlestown Neck to the corner of Charlestown and Stillman streets.

NOVEL CAR CONSTRUCTION

One old-timer tells us about the "bobtail" cars which made the circuit from Bunker Hill in Charlestown to Dock Square. Instead of changing horses to the other end of the car for the return trip when Dock Square was reached, the driver swung the car around, the body being pivoted centrally to permit it to turn in either direction. The sensation of being thus whirled around was particularly edifying to passengers, many of whom, particularly ladies, no doubt made the trip for the sole purpose of experiencing it.

DESTRUCTIVE COMPETITION

Competition was keen in those days, and rival companies fought each other bitterly. One such contest was between the Charles River Street Railway Company and the Union Street Railway. In its competition with the Union Street Railway (later the Cambridge Street Railway), the Charles River Company introduced the 5-cent fare for the first time in Boston. It later tried a 4-cent fare, but this was a losing proposition. The railway was ultimately absorbed by its old rival, the Cambridge Street Railway.

This Charles River company had its terminal at the Boston and Albany railway station on Essex street in Allston. One of its lines extended through to Union Square in Somerville. The route ran through Cambridge, and the river was crossed at the old Brookline street bridge, where the Cottage Farm Bridge is now located, thence over the "Mile Ground" to the station. This "Mile Ground" was the section of Commonwealth avenue extending from the bridge to "Paddy Ryan's Corner," now Governor Square. On the site where the Hotel Buckminster now stands, "Paddy" Ryan operated a famous half-way house, with plenty of stable room for horses. Here dinners were bet on horse races run over the "Mile Ground." "Paddy" Ryan's was the popular gathering place for horsemen.

MORE COMPETITION

In the early seventies another railway started up in competition with the Metropolitan, namely, the Highland Street Railway. Its line ran out Columbus and Shawmut avenues, out Warren and Hampden streets, through Blue Hill avenue to what is now Franklin Field. The competition of this concern ate into the business of the Metropolitan in the eighties and facilitated its absorption by the West End Street Railway, incorporated in 1887.

WEST END STREET RAILWAY FORMED

The West End Street Railway was the outgrowth of a development project of the West End Land Company, which owned large tracts in Brookline in and about Longwood and the present Coolidge Corner. Henry M. Whitney, a leader in Boston street railroading, headed the West End Street Railway. He early saw the opportunity to acquire the Metropolitan Railway and to merge it with the West End. Then the Highland Railway absorbed the Middlesex, operating to Charlestown. And finally all the rival companies were taken over by the West End.

In 1888, after Mr. Whitney and the West End Street Railway obtained control of the local street-railway situation, there began the second stage of street-railway development in Boston, the electrification of the horse railways.

(To be concluded in a later issue)

LAWS OF GOOD WORK

In the September issue of "The Foreman" appeared an article by Dr. Harry Myers, of Dayton, Ohio, in which he listed six laws of good work in industrial plants. The same hold true in public utilities also. They are printed below:

1. Be clean and orderly.
2. Take good care of property, equipment and material.
3. Follow instructions carefully and continually.
4. Work well from whistle to whistle.
5. Work every day and tell your foreman if you cannot.
6. Work well with others.

REGISTER ANY TIME
FOR
The A B C of the Motor Bus
The A B C of the Motor Car
The A B C of Electric Railway Power

"EL" NEWS NOTES

Items of Interest Regarding Recent Incidents With Which All Employees Should Be Familiar

BUS-LINE CHANGES

ON Dec. 13, in substitution for car service, a bus line was put into operation between West Medford and Sullivan square from Woburn street via Playstead road, High street, Medford square and Mystic avenue to Sullivan square station lower level. Buses leave Woburn street daily at 5:17, 5:32, 5:45, 5:52, and 6:00 a.m., then about every ten minutes until about 12 midnight; then at 12:24, 12:36, and 12:48 a.m., returning from Sullivan square 20 minutes later. There is service also from Madison street and Playstead road to Sullivan square during the morning and afternoon rush-hours. The new metropolitan type buses seating 39 passengers are used on this route.

Also since Dec. 13 the Fenway-Bowdoin bus line, formerly operating for a part of the day between Ipswich street and Bowdoin square, has operated throughout the day from Massachusetts station to Bowdoin square.

DIFFICULTY OF RUNNING CERTAIN CARS "EXPRESS"

A CONTRIBUTOR to the Boston Herald suggested that one out of every three Lake street-Commonwealth avenue cars be "expressed" empty from Park street to permit passengers boarding at Boylston street to board empty cars. On Nov. 29, Mr. Dana, for the trustees, sent a letter to the editor of the Herald explaining the situation, in part, as follows:

> The Park street station is by far the busiest of all the stations in the Boylston street subway. So rapidly do passengers for any destination gather during the rush hours that it would be impractical and an injustice to these riders to "express" any cars through that station except in cases where delays have occurred which bring together two cars bound for the same destination, or in cases of emergency. "Expressing" of any number of cars through Park street for the convenience of a few at Boylston street would interfere with the service to the many. "Expressing" of cars is a resort used to meet actual operating conditions, and is not a matter properly to be included within the making of schedules.
>
> Not only is this suggestion impractical, but there is no need for it, as shown by counts and observations made recently during the afternoon rush hour. (Details were included in the letter.)
>
> Between 4.03 and 6 o'clock, there were 356 passengers who boarded the Lake street-Commonwealth avenue cars at Boylston street, whereas at Park street 2,803 passengers boarded these cars.

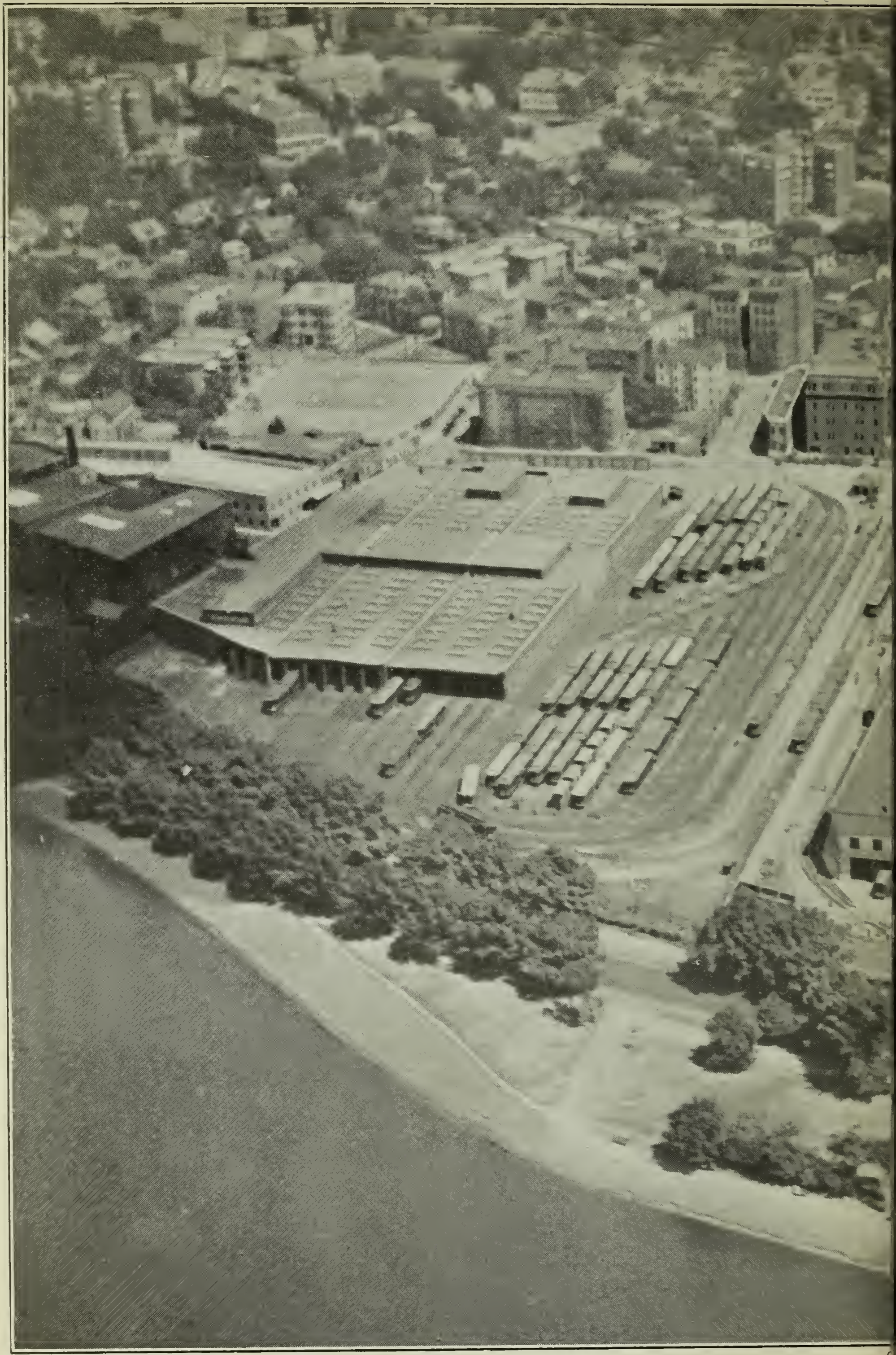
FACTS ON 5-CENT FARES

ON December 12, Mr. Dana, on behalf of the trustees, sent to the editor of the Boston Herald a letter designed to clarify certain points raised in a letter published in its issue for Dec. 3. Excerpts from Mr. Dana's letter follow:

> A writer to the Herald recently describes the 5-cent fare on the "El" as "very elusive" and, in his opinion, "virtually non-existent." May we take this opportunity to try to clarify

(Please turn to page 202)

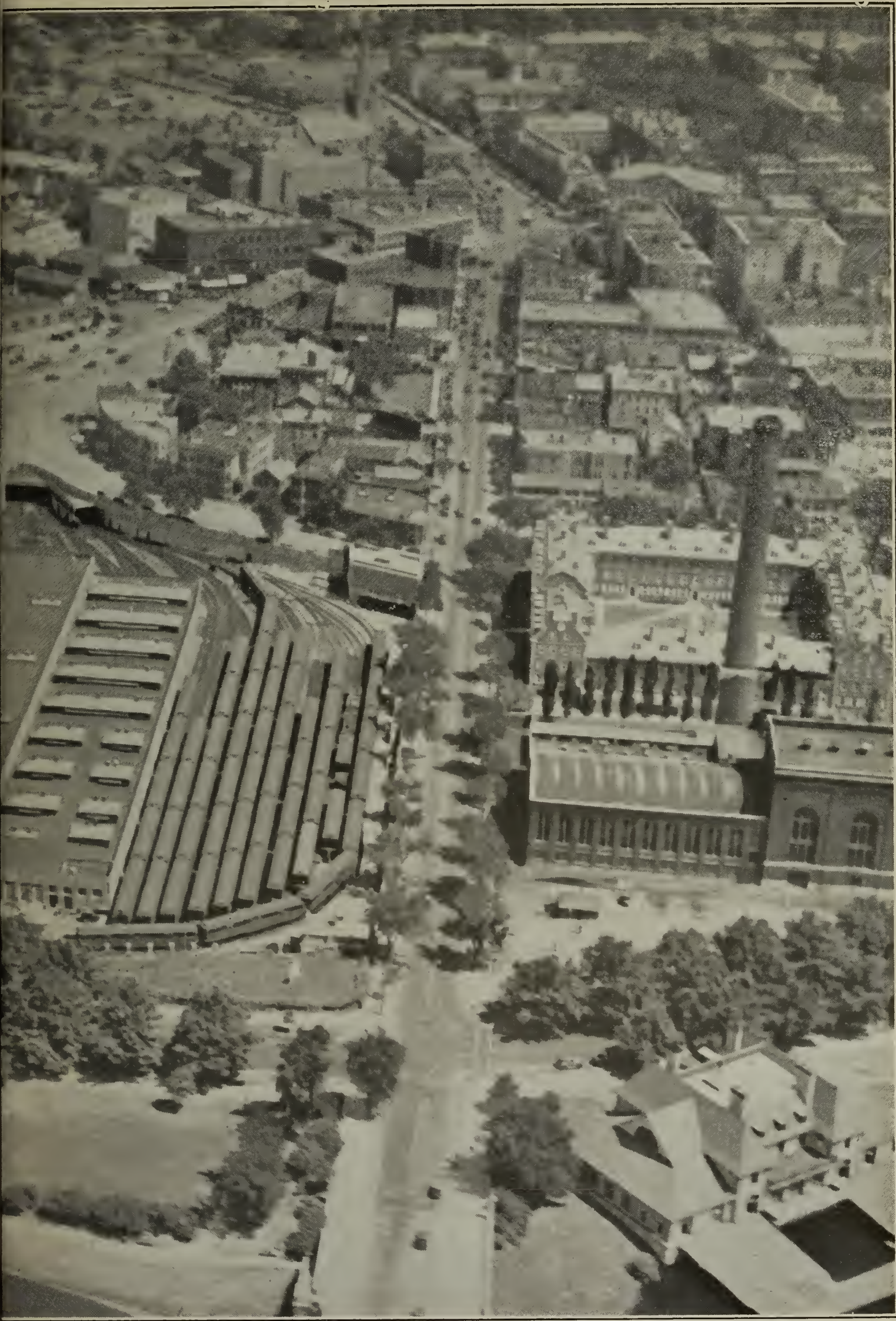
NEW JORDAN MARSH ENTRANCE AT WASHINGTON STREET STATION



Copyright by Aero Scenic Airviews.

Airplane View of Bennet Street Carhouse and Y

(Note Memorial Drive, Harvard power st



Div. 3, and Eliot Square Shops and Yard, R. T. L.
ow dismantled, Harvard Sq. and Eliot Sq.)

"EL" NEWS NOTES

(Continued from page 199)

the entire situation with respect to the local 5-cent rides?

There are about 125 trolley and bus routes on the Elevated system on which special 5-cent rides are in effect. On every bus route on the system there is a 5-cent local ride in effect for the entire length of the route, except that where buses enter prepayment stations, the local fare rides end at the last stop before entering the stations.

In about 100 of the 125 local 5-cent rides, including all the bus routes, the passenger pays 5 cents cash for a ride in either direction, and there is no difficulty in distinguishing local from through riders. Consequently, here there is no conceivable confusion on the part of the passengers as to the method of fare collection.

On certain lines, especially those like Huntington avenue, which enter the subway, the system must prevent riders who have paid 5 cents from taking a 10-cent ride. On about twenty-five routes, it is necessary to issue tickets in order for this purpose. On Nov. 28 fare collection on these twenty-five routes was simplified materially. Previously, the use of the return coupon issued on these lines was limited to a ride in the reverse direction on the line on which it was issued. It was good for a limited period and the return coupon was not redeemable. On Nov. 28, a ticket was substituted for the return coupon, previously good only for a local ride in the reverse direction on the line on which it is issued. The use of the ticket has been extended to all local rides where a 5-cent fare is charged. It is no longer limited in time and can be redeemed for cash at the office of the treasurer of the Railway.

As to the claim that the 5-cent local rides are "elusive and virtually non-existent," from about 180,000 to 207,000 riders every day use the 5-cent local fare ride. Of these, only from 9,000 to 12,000 use tickets.

That thousands of people are well satisfied with the 20 per cent reduction in the cost of the local ride is perhaps best attested from an increase in the number of local riders.

COLLECTION OF 5-CENT FARES

SIMPLIFICATION of the method of fare collection in connection with the 5-cent special reduced rate for local rides where return coupons were issued were announced by the Railway on Nov. 25.

The return coupon, formerly used on about twenty-five lines and good only for a limited time for a local ride in the reverse direction on the line on which it was issued, was eliminated. In substitution, a 5-cent ticket is now issued on these lines, good not only in the reverse direction on these lines, but also good in either direction on any of the other one hundred lines on which there are local 5-cent rides. On the twenty-five lines where the local tickes are good only in one direction, local riders in the opposite direction pay 10 cents cash and ask for an identification warrant which is exchanged for a local 5-cent ticket if local riders leave the car within the limits of the 5-cent ride. Use of tickets is necessary on these lines in order to distinguish local from through riders.

On these twenty-five lines the time limit within which the ticket issued in connection therewith may be used is abolished, and the 5-cent tickest may be redeemed at the treasurer's office.

The change does not affect in general the method of fare collection on the one hundred lines where the special reduced fare for local rides is paid in cash, except that the tickets issued may be used on these lines. Local ride tickets cannot be used in any way in payment for the regular 10-cent fare, which is payable only in cash.

A few of the 5-cent local rides have been shortened. The limit of the local fare route on the Cypress street-Huntington avenue, Chestnut Hill-Huntington avenue, and Arborway-Huntington avenue lines is now Brigham Circle (Francis street) instead of the intersection of Massachusetts and Huntington

CONSTRUCTION IS ACTIVE AT GOVERNOR SQUARE avenues. The limit of the local ride on the Dudley-North Station line and of the Egleston station and Amory street-North Station lines is now at Dover street instead of at the subway entrance at Broadway. These changes were made to bring these lines into conformity with the basic plan of local rides.

These changes were set forth for the information of transportation department employees in General Order No. 190, issued Nov. 24, effective Nov. 28.

LEGISLATION REQUESTED BY TRUSTEES

ON Dec. 3, the public trustees of the Railway filed with the Secretary of State the following recommendations: a bill to expedite trolley service where automatic traffic signals are installed; another bill which would exempt trackless trolleys from the provisions of the motor vehicle laws, and a bill to penalize smoking in cars.

The trackless trolleys, according to the trustees, have proved satisfactory enough elsewhere to warrant at least a trial installation on the "El." Modern trackless trolleys are designed substantially along the lines of the latest type metropolitan motor bus, but power is furnished by the trolley in about the same way as with electric cars.

In asking for legislation to speed up the movement of street cars, the trustees state that the large increase of automobiles on the highways has resulted in congested traffic which seriously slows down street railway operation. The present automatic traffic lights tend seriously to increase delay to street railway passengers, unless these signals are equipped to avoid such delays, according to the trustees. The bill proposed would require public officials authorized to install automatic traffic signals to notify the street railway having a location on the street and require that signals installed at any street intersection have a device whereby, when a car reaches the intersection, the lights will automatically change within a reasonable period to permit its passage. Under the proposed bill the company is liable for any additional expense from the installation of this special device.

Recommending that a penalty of $25 be imposed upon persons smoking in cars other than smoking cars, the trustees declare that during the past few years there has been considerable annoyance to passengers on bus and trolley lines caused by other passengers smoking and persisting to do so, although requested by the operator of the car or bus to desist. The trustees say that there is no statute now under which such an offence can be prosecuted.

CHANGES IN PENSION LIST

SINCE the last report there has been a net increase of four in the number of pensioners, namely from 490 to 494. The total monthly compensation is now just under $24,000. The changes were as follows:

Added since last report:
John P. Doyle, motorman.
Wm. J. Maxwell, operator.
J. J. Kenney, starter.
Geo. Meserve, operator.
A. E. Sherman, fireman signal division.
E. J. Browne, hoisting engineer.

Reported dead since last report:
H. E. Chilcott, gateman.
Wm. Maitland, motorman.

BEFORE Chief Justice Bolster, in the Boston Municipal Court, on Dec. 13, two men were fined for misuse of transfers at the Dover street elevated station. Francesco Calapa was fined $5 and Samuel Lewis was fined $10.

AUTOMOTIVE VEHICLES

The Railway is registering the following fleet with the Registrar of Motor Vehicles for the year 1931: 25-passenger buses, 97; 29-passenger buses, 128; 31-passenger buses, 1; 33-passenger buses, 1; 35-passenger buses, 15; 36-passenger buses, 16; 37-passenger buses, 27; 38-passenger buses, 1; 39-passenger buses, 32; 40-passenger buses, 48; total passenger buses, 366. Business cars, 53; trucks, 106; trailers, 14; snow loaders, 9. Grand total of motor vehicles, 548.

TWO BIG EVENTS IN JANUARY

JANUARY 7

Boston Elevated Forum

EDWARD DANA, *Chairman*

Speaker, DR. R. J. GRAVES, *Chief Surgeon Boston and Maine Railroad*

JANUARY 21

Supervisors' Association

JAMES DONOHUE, *President*

Speaker, C. S. CHING, *Director of Industrial and Public Relations United States Rubber Company*

BOWLING SCORES

BOSTON ELEVATED BOWLING LEAGUE

Standing Dec. 10, 1930

	Won	Lost	Pinfall
Everett Shop	28	8	12712
Division One	27	9	12756
Rapid Transit Lines	24	12	12391
Salem Street	21	15	12412
Repairmen	19	17	12676
Bus Service	17	19	12238
Central Power	14	22	12113
Supervisors	14	22	11896
Division Three	10	26	11715
South Boston Power	6	30	11684

High season single, Doherty 142
High season three-strings, Ritchie 346
High season team single, R. T. L....... 572
High season team 3-strings, R. T. L......1485

Individual Averages
(Bowlers rolling less than 12 strings have been omitted)

Wilson 102, Ritchie 109, Killion 99, Reardon 99, Swain 98, McCarthy 97, Potterton 97, Smith 96, Mann 96, McCrystal, J. 96, Doherty 96, Brown 95, Tower 95, Toomey 94, Marshall 94, Bunney 94, Murphy 94, Powers 94, Foley 94, Page 93, Callahan 93, Missett 93, Downey 93, Ball 93, Law 92, Burgess 92, Hasson 92, Olive 91, Arnold 91, Maw 91, Carney 90, Hadley 90, Riley, W. J. 90, Moccia 90, Reilly, A. 89, Owens 89, Carter 89, Lord 89, Castagno 88, Reilly, C. 88, McCrystal, W. 88, Cannon 88, Fitch 87, Benson 87, McLeod 86, O'Keefe, J., 86, Ryan 85, Fuhs 84, Griffin 84, Kelley 84, Beaudoin 83, Miller 83, Crawford 81.

The officers this year are Wm. Marshall, president; Wm. F. McCrystal, secretary, and Henry C. Olive, scorer.

THINGS THAT COUNT

Submitted by "Celt—Coote Hill"

Not what we have, but what we use,
Not what we see, but what we choose—
These are the things that mar or bless
The sum of human happiness.

The things near by, not things afar,
Not what we seem, but what we are—
These are the things that make or break,
That give the heart its joy or ache.

Not what seems fair, but what is true,
Not what we dream, but what we do—
These are the things that shine like gems,
Like stars in fortune's diadems.

Not as we take, but as we give,
Not as we pray, but as we live—
These are the things that make for peace
Both now and after time shall cease.

"Papa, I saved ten cents today. I ran all the way to school behind a street car."

"Why didn't you run behind a taxicab and save a dollar?"—*Iowa Wesleyan Woofus.*

FOLDING SEATS FOR MORE PASSENGERS

IN Amsterdam a passenger cannot be too sure of his seat in the street car. When there are enough seats for all the passengers everything goes along nicely. When the car becomes crowded, however, the conductor directs that seats be "put up." All the "sitees" spring to their feet and the long seats bounce back on hidden springs so that they lie flat against the side of the car, leaving on each side an extra strip of space twelve inches wide and the entire length of the car. With everybody standing, the conductor allows a score or more people to enter the car.

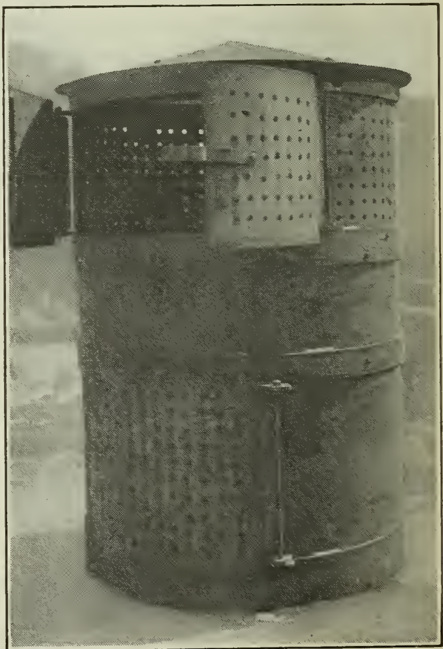
BURNING "EL" RUBBISH

After considerable experimenting, the department of rolling-stock and shops designed and built a number of incinerators, like the one shown in the illustration, which are giving good satisfaction in different parts of the property.

Large quantities of waste material are removed daily from our cars, and from in and about carhouses and stations. Some of this is baled and sold as waste paper, but much is unsalable and must be burned. The new incinerators accomplish this efficiently due to their large size and convenient arrangement of doors, etc., and without endangering surrounding property by the escape of sparks.

The incinerator is cylindrical in shape, with a conical top. It stands about 5 feet 9 inches high, and is 3 feet 6 inches in diameter. There are doors for putting in the rubbish and another at the bottom for the removal of ashes.

The lower section of the cylinder is solid plate steel $\frac{3}{16}$ inch thick; the upper



It Burns the Rubbish

HOW CAN WE IMPROVE THE SERVICE?

Suggestions by employees for improvement of service are always appreciated.

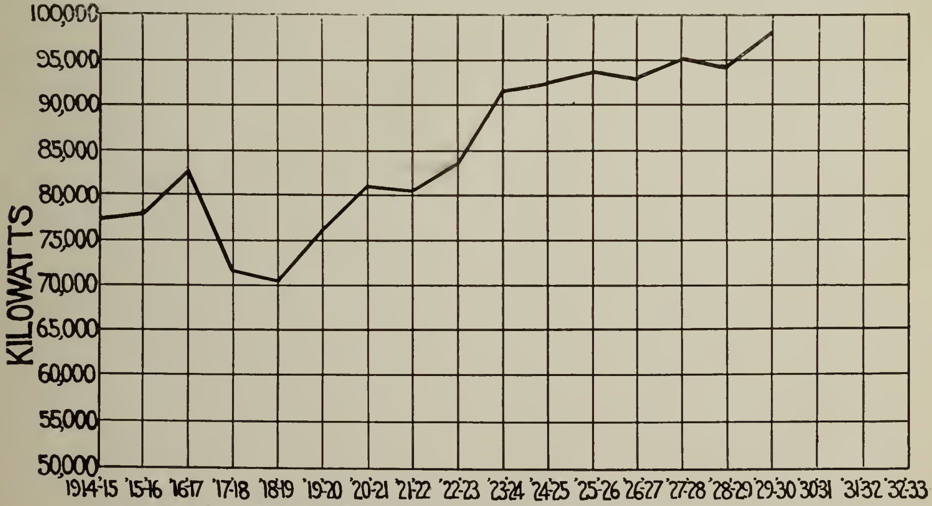
Write the general manager whenever you have an idea which, after careful thought and consideration from every angle, you believe would be helpful and he will give it his personal consideration.

section is of plate perforated with approximately 472 holes ½ inch in diameter. Four bands, ⅜ inch thick, electrically welded to the plates, reinforce and stiffen them.

Any incinerator is subject to severe treatment, due to the intense heat of the burning contents and to the alternate heating and cooling, especially in winter. Exposure to weather conditions without paint protection requires a rugged construction, which is provided by this design. The conical top permits use in any weather, while the perforations at the top provide vent for smoke. The solid lower section slows up combustion and thus limits the intensity of the heat due to the quick combustion of the contents. The heavy reinforcing bands around the cylinder prevent distortion under extreme heat, which is important because it is the practice to fill the incinerator to the top before igniting it.

POWER DEMAND INCREASES

The chart below shows that, year by year, the maximum demand for power by the Elevated system is on the increase. Since 1918-19 the general tendency has been upward, the increase in maximum power having been nearly 40 per cent. The average increase in this period has been more than 3½ per cent per year. The maximum load was reached last February, when it was 98,280 kilowatts. This power is the alternating-current power which is generated, and it is the average power for the hour of maximum load. In other words, it is equal to the maximum kilowatt-hours generated during one hour. During this hour the actual maximum kilowatts at some instant, as might be indicated on an instrument, would probably be much higher than this. In order to make reliable comparisons, however, it is customary to average the power over a short period, such as one hour.



MAXIMUM POWER USED IN EACH YEAR

WHAT HAPPENED IN EARLIER YEARS IN DECEMBER

(Continued from Page 196)

Twenty-six Years Ago

The East Boston tunnel was opened to the public. (On the 30th.)

Thirty Years Ago

The last horse-car line to operate in Boston (on Marlboro street) stopped running. (On the 24th.)

Thirty-two Years Ago

H. A. Pasho was appointed superintendent of Div. 7 and Arthur W. Senter superintendent of employment. (On the 4th.)

Thirty-three Years Ago

The West End Street Railway was leased to the Boston Elevated for the term of 24 years, 8 months and 9 days from Oct. 1, 1897. (On the 9th.)

The Boston Elevated took possession of the West End property. (On the 30th.)

Thirty-seven Years Ago

Electric-car operation to Medford was started. (On the 6th.)

Timothy Connell was appointed supervisor of timetables. (On the 19th.)

Seventy-four Years Ago

The first car was operated on the Dorchester Avenue Railway.

Correction

On page 186 of the November issue, through service from Fields Corner to Massachusetts Station was stated to have begun on November 16th, ten years ago. It began on Oct. 16th.

RUSSELL ADDRESSES FORUM

The speaker at the second Forum meeting for this season, over which Mr. Dana presided, was H. A. Russell, international supervisor, International Union of Operating Engineers. Mr. Russell's topic was "Organized Labor and Education."

The speaker explained the attitude of leaders in the American Federation of Labor, not only toward education but also toward closer co-operation within each industry with employers to the end that the greatest prosperity of the industry be assured. He stated frankly that he is looking at this subject from the standpoint of the worker, for whom he desires the best possible wages and working conditions. These ends can be secured, however, only when such co-operation exists.

Mr. Russell's plea was for education as a means to enable the workers to do their best work. He did not deplore the extension in the use of machinery, this being, as he said, "a machine age." However, industry must take care of the workers by changing wages and working conditions so that workers benefit by their intelligent cooperation with the employers.

Mr. Russell advised the solving of economic problems within an industry, rather than depending upon governmental or other outside means. Hence he did not advocate government unemployment insurance.

Following Mr. Russell's address a new motion picture film entitled "Buried Sunshine," recently released by Stone & Webster, was shown. It depicted in an interesting way the anthracite mining industry, with "shots" of numerous mining operations.

The speaker for the next Forum, scheduled for Wednesday, January 7, will be Dr. Robert J. Graves, chief surgeon, Boston & Maine Railroad, Concord, N. H.

THE COVER PICTURE

This month's cover picture is one in the series of "El" Machines Behind the Scenes, begun in March, 1929. Previous pictures in the series were:

Cutting Off a Rail in 30 Seconds
Milling Machine
Punch Press
Electric Crane
Snow Loader in Action
40,000-kilowatt Steam Turbine
Removing Old Track Expeditiously
Powerful Rip Saw
3,000-kilowatt Rotary Converter

The sanding machine, or "sander," shown this month is practically the last machine in the woodworking mill at the Everett shops through which wood in its process of manufacture passes. This machine sandpapers the surface of a completely fabricated door, sash, panel or other flat work, with one passage through it. In 30 seconds one side of a door can be sanded and 100 doors can be made ready for the painters in about two hours. This machine occupies a floor space of about 7 feet by 10 feet.

To watch this machine work reminds one of Victor Hugo's story, "Toilers of the Sea," in which he vividly describes the octopus, or devil fish. This has long tentacles and many pustules, or vacuum-like cups, capable of relentlessly holding and drawing its victim within its power. Similarly this very important machine also has its postules in the shape of small rubber vacuum cups, 1,100 in number, and about 2 inches in diameter. This is three times the number of postules that a devil fish has. The cups are mounted on a slowly and continuously moving table upon which the work to be sanded is placed. After once entering the machine the work cannot be withdrawn from its embrace.

This table is automatically adjusted to accommodate any thickness of material up to 6 inches, and any width up to 42 inches. It will hold the piece being sandpapered, no matter how small, firmly against the revolving rollers or drums which do the sandpapering. These rollers, three in number, are 12 inches in diameter and 42 inches long and lie horizontally over and across the moving platform. The first roller is covered with coarse sand-paper, the second medium, and the third fine. This sandpaper lasts about two weeks, after which the cylinders have to be recovered. Each roller is driven by an individual motor and revolves at 1,200 revolutions a minute.

Considerable dust is necessarily thrown out by these swiftly revolving drums, but it is not permitted to permeate the air of the shop. The dust is drawn into a hood located directly over each roller and is carried to a dust collector outside of the building.

This sander was one of the new machines purchased as a part of the new equipment of the Everett shops and cost $4,242.

SUPERVISORS' ASSOCIATION ACTIVITIES

Ladies' Night and Dance

Supplementing the preliminary report in the November issue of "Co-operation," the following will be of interest regarding the second annual Ladies' Night and Social of the Boston Elevated Railway Supervisors' Association. This was held in the Elks' Ballroom, Central Square, Cambridge on Wednesday evening, Nov. 19. Music for the dancing was furnished by Ed Andrews' Nautical Orchestra. An entertainment program was given about the middle of the evening, a novel feature for a dance. This was in charge of Hazel Childs, comedienne, and comprised vocal numbers, a double xylophone act, novelty singing and dancing, all with an orchestra accompaniment. More than 500 persons attended the dance.

The entire expense, including that of an extra hour of dancing, was more than met by the sale of tickets at 75c each, so that the committee was able to turn over a substantial balance to the Board of Control at its meeting of Dec. 8.

The committee in charge comprised the following: W. H. Burrell, chairman; F. J. Cusick, general offices; John Cashman, purchasing department; George J. Kelly, auditing department; F. A. Beaudoin, W. J. Carney, J. J. Cunningham, J. A. Griffin, E. R. Kelly, W. F. McCrystal, J. N. MacPherson, and J. E. Hellender, transportation department; James Donohue, E. L. Doyle and T. Fleming, power department; W. E. Benson, E. H. Childs, C. A. Howard and W. G. Moore, rolling-stock and shops department; L. J. Collins, P. F. Corliss, J. B. Flaherty and E. R. Thomas, maintenance department.

Athletics Discussed on Dec. 17

The feature of the December meeting of the Association was an address by Edward G. Morris, announcer of athletic events at the Harvard Stadium, on the subject of "Athletics." This was followed by an interesting vaudeville entertainment. The Association decided not to continue the use of identification tags at meetings, these having been introduced when the Association was formed for the purpose of helping to carry out the slogan "Get Acquainted," and also to serve as a record of attendance. As the members may now be assumed to be fairly well acquainted and as cards are found preferable for attendance recards, the tags seem no longer necessary. In addition the membership has grown beyond the capacity of the present tag-board.

The January Meeting

The speaker for the next meeting, scheduled for Wednesday, Jan. 21, will be C. S. Ching, director of industrial and public relations, United States Rubber Company, New York, recently president of the American Management Association and for many years an official of the Boston Elevated Railway.

DEBATING CLUB FORMED

A group of employees who are interested in public speaking formed, on December 4, "The Boston Elevated Debating Club." J. B. Flaherty, maintenance department, was elected chairman and G. E. Ellard, maintenance department, secretary. The purpose of the Club is to develop interest in public speaking and debating. Two groups of subjects will be discussed in the practice debates, which will be held at 6 P.M. on Thursday evenings. One group includes subjects of specific interest to the Railway, selected to improve the members of the club in their ability to render greater service. The other group includes subjects of general public interest. The club has in mind the annual debate with employees of the Edison Company as an objective. All men interested in the objectives of the club are invited to join.

CHANGES IN THE RESERVE FUND

Fiscal Year 1929-30
July 1, 1929, $1,000,000

July	$285.903.19*	Jan.	$195,210.33†
Aug.	361,650.56*	Feb.	18,035.80†
Sept.	197,825.11*	Mar	178.957.43†
Oct.	64.866.77†	Apr.	54.282.43†
Nov.	64,148.53†	May	45,824.02†
Dec.	286,824.84†	June	$113,749.60*

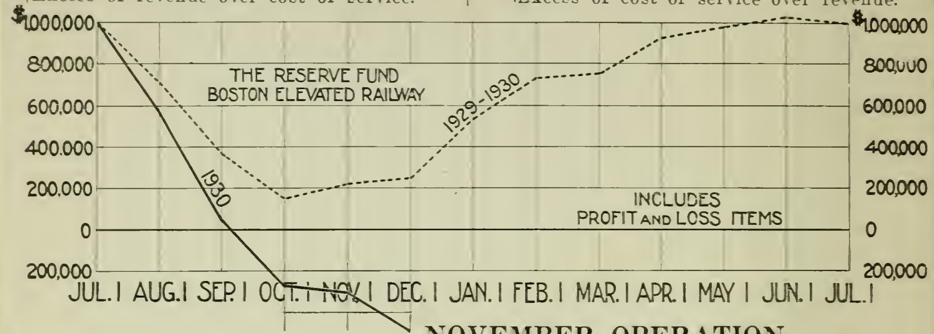
Proft and loss credit..............$50,978.31

†Excess of revenue over cost of service.

Fiscal Year 1930-31
July 1, 1930, $1,000,000

July	**$424,295.95***
Aug.	**531,494.84***
Sept.	**316,296.99***
Oct.	**35,278.21***
Nov.	**$185,317.05***

*Excess of cost of service over revenue.



NOVEMBER OPERATION

	1930	1929
GENERAL FINANCIAL DATA		
Cost of service exceeded revenue	$185,317.05	——
Revenue exceeded cost of service	——	$64,148.53
Operating revenue per car-hour (A.E.R.A. std.)	$5.73	$6.29
Operating revenue per car-mile operated	56.56c	61.79c
Average fare per revenue passenger	8.902c	9.292c
Ratio operating expense to operating revenue	74.71%	68.89%
PASSENGERS CARRIED		
Revenue passengers	28,088,713	29,945,862
Per cent 5c and 6¼c passengers	21.97%	18.09%
Revenue passengers per car-mile operated	6.158	6.431
OPERATING FACTS		
Trips operated	607,234	601,426
Car-miles operated:		
Rapid-transit lines	1,367,162	1,461,881
Surface, two-man	813,706	1,107,170
Surface, one-man	1,727,646	1,490,978
Express, newspaper and sprinkler cars	——	——
Motor bus	652,789	596,507
Total miles operated	4,561,303	4,656,536
ACCIDENT DATA		
Accidents per 10,000 car-miles	1.65*	1.64*
Accidents per 10,000 bus-miles	1.86*	1.63*
Revenue passengers carried per accident	19,650	19,700
Average number of witnesses per accident	3.53	3.26
COMPLAINTS AND DEFECTS		
Complaints in regard to car service	38	29
Employees complained of by car riders	86	89
Car defects reported per 10,000 car-miles	2.3	3.7
INFORMATION ABOUT POWER		
D.c. kw.-hr. output gross per month	20,618,200	21,272,590
Maximum kw. load	87,500	91,190
Tons of coal consumed for power	15,639	17,248
Lbs. of coal for power per d.c.kw.-hr. at cars	1.703	1.821
Operating and maintenance cost of power, including depreciation:		
Per d.c.kw.-hr. for car service	0.86c	0.89c
Per revenue car-mile	4.20c	4.28c
K.w.-hr. per revenue car-miles	4.869	4.806

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*Does not include miscellaneous accidents or derailments.

December 19, 1930

EDWARD DANA, *General Manager.*